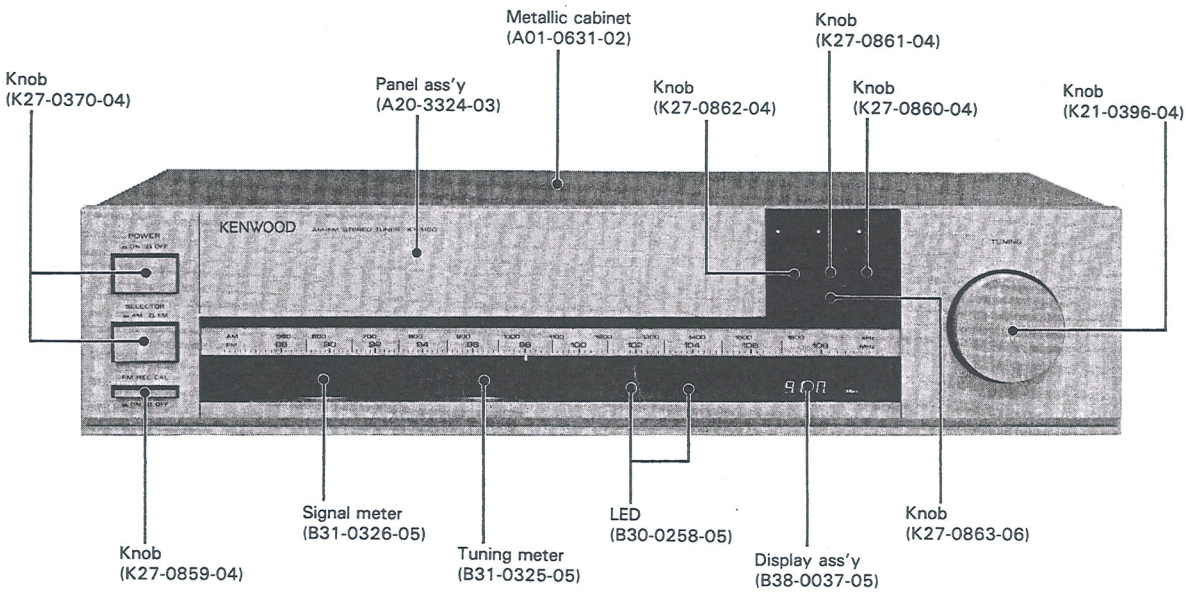
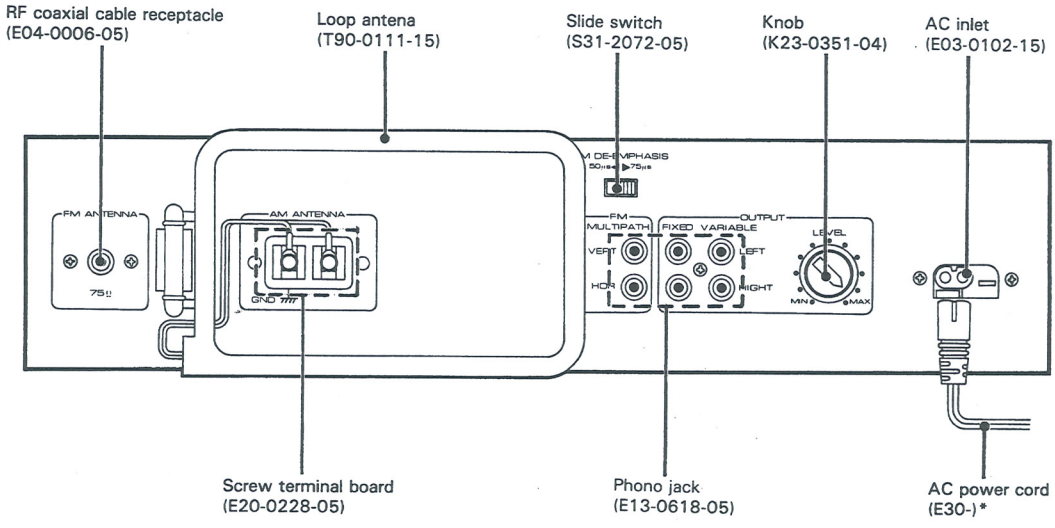
SERVICE MANUAL

KENWOOD KT-1100

AM-FM STEREO TUNER



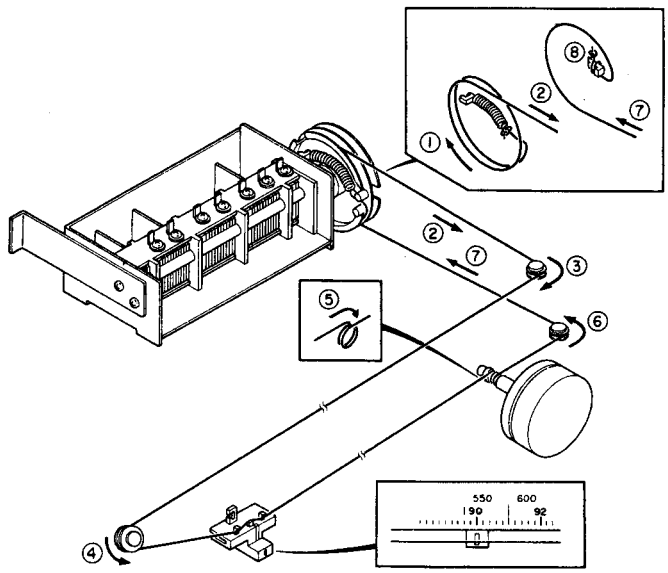


* Refer to parts list on page 26.

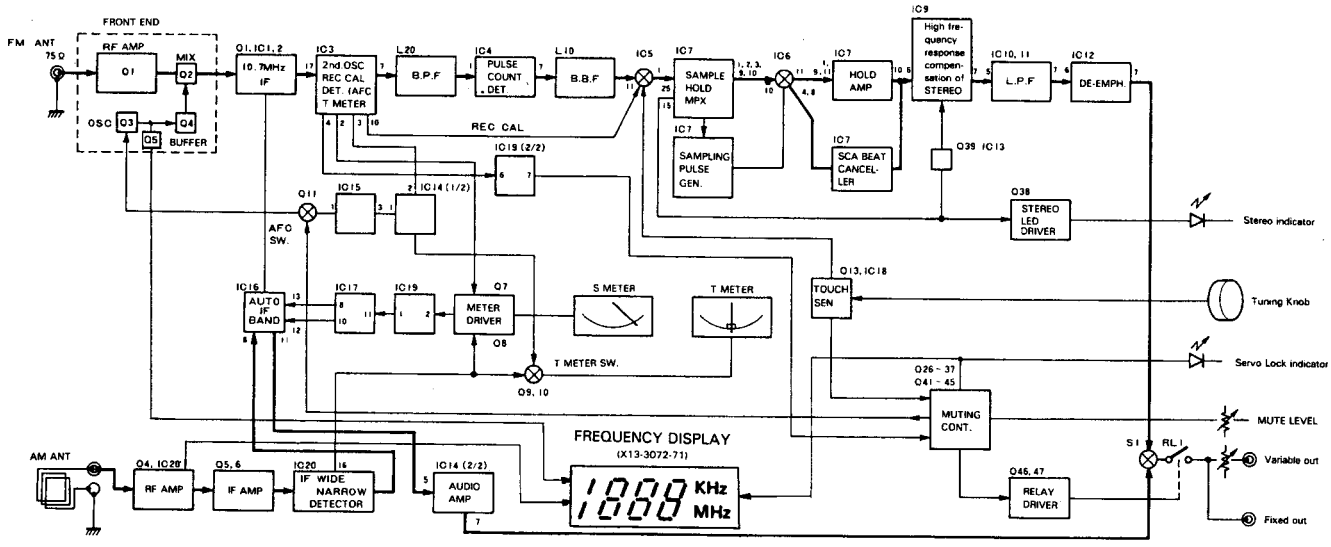
DIAL CORD ROUTING/BLOCK DIAGRAM

DIAL CORD ROUTING

1) Tie the dial cord to the dial spring, then hook the spring to the boss of the variable capacitor pulley.
2) Wind the cord around the pulley twice, then string it in the direction indicated by arrow ②and over pulleys③and④.
3) Wind the cord around the dial shaft twice, then string it over pulley⑥.
4) String the cord in the direction indicated by arrow⑦, then take a half turn around the variable capacitor pulley and fasten it to the hook of the pulley as shown below (⑧).
5) Release the dial spring from the boss of the variable capacitor pulley.
6) Receive a 90 MHz signal generated with a FM-SG and adjust the needle so that it indicates 90 on the dial scale.



BLOCK DIAGRAM



CIRCUIT DESCRIPTION

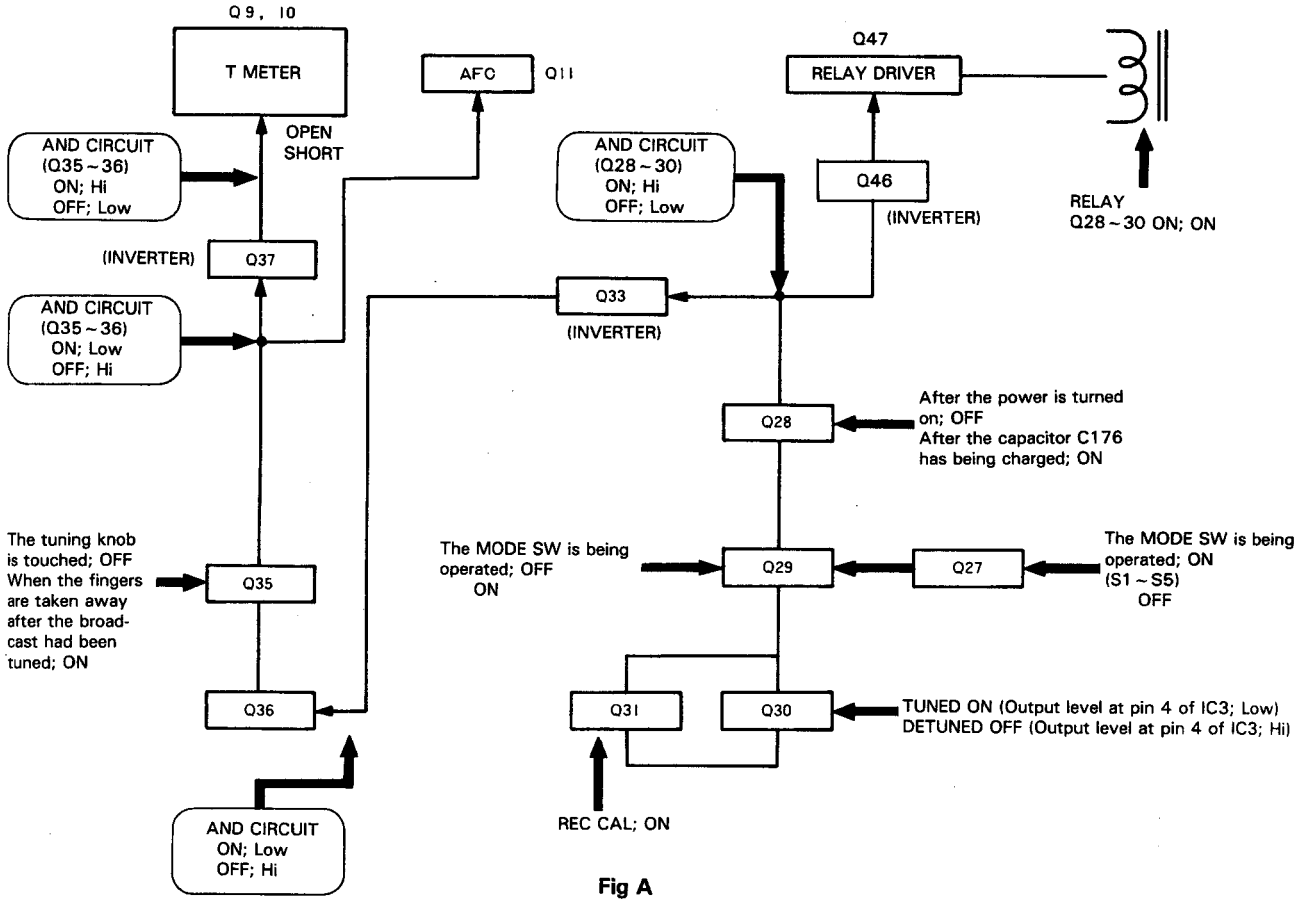


Fig A

The block diagram above shows the function of each transistor described below. These functions are classified into three groups as follows.

1 T meter control
2 AFC ON-OFF
3 Muting relay ON-OFF

As shown in Fig. A, the muting and T-meter circuit uses AND gates and inverters to settle conditions required for any FM or AM reception mode. Circuit operation is explained using this block diagram.

"Q28"

Q28 is controlled by the collector signal of Q26. The collector voltage of Q26 is 0 V immediately after the power is turned on because C176 (between the collector and emitter of Q26) is charged. Therefore, a low level voltage is applied to the base of Q28 so that it is off. Since the collector level of Q28 is high, relay drivers Q47 are off and the relay is off. After C176 has been charged, the collector level of Q26 is high; therefore Q28, Q47 are on and the relay is actuated. That is, the audio output is muted after the power is turned on until C176 has been charged.

"Q29"

Q29 is controlled by Q27. Since the control signals from the mode switches are applied to the base of Q27, Q29 is indirectly controlled by Q41 through Q45 in the mode switch circuit. A high level voltage (about 0.6 V) is applied to the base of Q27 momentarily when a mode switch is operated; this turns Q27 on and Q29 off. Therefore, the AND gate consisting of Q28, Q29 and Q30 is closed and the relay drivers are turned off. This mutes audio output during the operation of a mode switch. (For the control signals applied to the base of Q27, see "Switch selector circuit, Fig. B".)

"Q30"

Q30 is controlled by IC3 through two paths. (See Fig. A.)

The level at pin 4 of IC3 is 0 V when a broadcast is turned, otherwise it is about 3.0 V. Since this voltage is applied to pin 6 of IC19 (2/2), the level at pin 7 of IC 19 (2/2) is high when a broadcast is tuned; otherwise, it is low. When a broadcast is tuned, D25 turns on and a high level voltage is applied to the base of Q30, causing it to go on. When both Q28 and Q29 are on (that is, when the conditions required for opening the AND gate are satisfied), relay drivers Q46 and Q47 are turned on and the relay is actuated.

CIRCUIT DESCRIPTION

The level at the emitters of Q7 and Q8 becomes high when a broadcast is tuned. This level is applied to pin 2 of IC18 (1/2), then a low level voltage is output from pin 1 and a high level voltage output from pin 6 is applied to the base of Q30.

This opens the AND gate (when the requirements are satisfied), turning on the relay drivers to actuate the relay. (S meter) see Fig. D.

"Q31"

Q31 forces the AND gate to open by bypassing Q30 when the REC CAL switch is turned on in the FM mode. When the REC CAL switch (S2) is turned on, the signal source is switched from the FM signal path to the REC CAL circuit, and +B power is fed to the related circuits.

CIRCUIT OPERATION WHEN THE REC CAL SWITCH IS ON

The +B supplied when the REC CAL switch is on turns on D39 in the mode switch circuit consisting of Q41 through Q45. (When the REC CAL switch is on, the following occur.)

1) The audio output is muted when the REC CAL switch is operated. (See "Switch selector circuit, Fig. B" below.)
2) D27 in the touch sensor circuit is shorted so that the oscillation of the touch sensor circuit is turned off.
3) D43 is shorted so that Q10 is turned on and the T-meter is shorted.
4) The level at pin 6 of IC5-(3/4) is set to high so that the signal source is switched from the FM signal path to the REC CAL circuit. At the same time, the FM signal path is grounded by IC5-(2/4). The REC CAL signal is applied to pin 8 of IC5-(3/4) from pin 10 of IC3, then output from pin 9 of IC5-(3/4).

"Q33"

Q33 is an inverter which inverts the signal output by Q28. The collector level of Q28 is low when a broadcast is tuned, so the collector level of Q33 is high. This satisfies one of the conditions required for opening the AND gate consisting of Q35 through Q36, which controls the T-meter shorting circuit.

When the AND gate is closed, the level at the collector of Q35 is high. This high level is applied to the base of Q37 to turn it off. When Q37 goes off, a low level voltage is applied to the gate of Q10 (which is used to short the T meter) to turn Q10 off. Thus, the T meter operates.

"Q34"

Q34 is controlled by the MUTE switch. A high level voltage is applied to its base in the STEREO mode and a low level in the MONO mode. Q34 together with Q35 and Q36 form an AND gate which is turned in when a high level Voltage is applied to its base.

"Q35"

Q35 is controlled by the signal from pin 7 of IC18-(2/2) in the touch sensor circuit. When the tuning knob is touched, a low level appearing at pin 7 is applied to Q35 to turn it off; when the fingers are taken away after the broadcast had been tuned, a high level is applied to Q35 so that it remains on.

"Q36"

Q36 is controlled by the collector signal of Q33. When the AND gate consisting of Q28 through Q30 is open, the collector level of Q28 is low; thus the collector level of Q33 is high. This causes a high level voltage to be applied to the base of Q33 so that it is turned on.

"Q37"

Q37 is controlled by the AND gate consisting of Q35 through Q36. When the AND gate is open, a low level voltage is applied to the base of Q37 so that it goes on. At this time, the collector level of Q37 is high and Q10 is on. Therefore, the T meter is shorted.

CIRCUIT DESCRIPTION

LOCK LAMP AND AFC SWITCH

The LOCK lamp lights when the hand is released from the tuning knob, that is, when AFC is active. When the tuning knob is touched the level at pin 5 of IC18 becomes about 0.8 V and about −5.8 V appears at pin 7 of IC18. This turns off Q35. Since Q35 forms an AND circuit together with Q36, both transistors are turned off when either transistor is off. Thus, the collector level of Q35 becomes high (about 7.1 V).
Then, the gate voltage of Q11 becomes high and AFC is turned off. When the hand is released from the tuning knob, Q11 is turned off so that AFC is turned on.

	IC18			Q35 Collector
	5	6	7	
Touch	0.8 V	0.9 V	−5.8 V	7.1 V
Untouch	1.1 V	1.1 V	6.1 V	−7.1 V

T METER OPERATION DURING SERVO LOCK, WHEN POWER IS TURNED ON OR WHEN NO SIGNAL IS RECEIVED

A <Servo Lock>

When the tuning knob is touched, Q35 is turned off and its collector level becomes high (about 7.1 V) as explained above. Then, the collector of inverter Q37 becomes low (about −7.2 V). Therefore, about −3.8 V is applied to the gate of Q10 to turn it off. This turns on the T meter circuit.
When the hand is released from the tuning knob, the collector level of Q37 becomes high (about 7.1 V) and Q10 is turned on. This shorts the T meter circuit.

B <NO Signal Reception>

About 5.3 V appears at pin 13 of IC3 when no signal is received during FM reception. This voltage is rectified by D6 and D7, so that Q2 is turned on.
The collector voltage of Q2 is applied to the gate of Q10 as shown below to turn on and off the T meter during FM reception.

	Output at collector of Q2			Voltaged gate of Q10
Signal received	−3.8 V		By LOCK	−3.8 V
AM reception	0.6 V		No signal	0.6 V
Switch is being operated			Un tuned	

C <Power ON>

When the power is turned on, the collector level of Q26 is low (about 0 V). Therefore, the base level of Q40 is low and its collector level is high (about 15 V) immediately after the power is turned on.
This high voltage is applied to the gates of Q9 and Q10 through R274 (330 kohms) so that they are turned on. This shorts the T meter circuit to the ground.
When the collector level of Q26 reaches about 0.8 V, Q40 is turned on. During normal operation, Q9 and Q10 are turned off when the collector level of Q26 becomes 0.1 V, so that the T meter operates.

CIRCUIT DESCRIPTION

Fig. B shows the functions of the above transistors. These functions fall into 3 groups as follows.

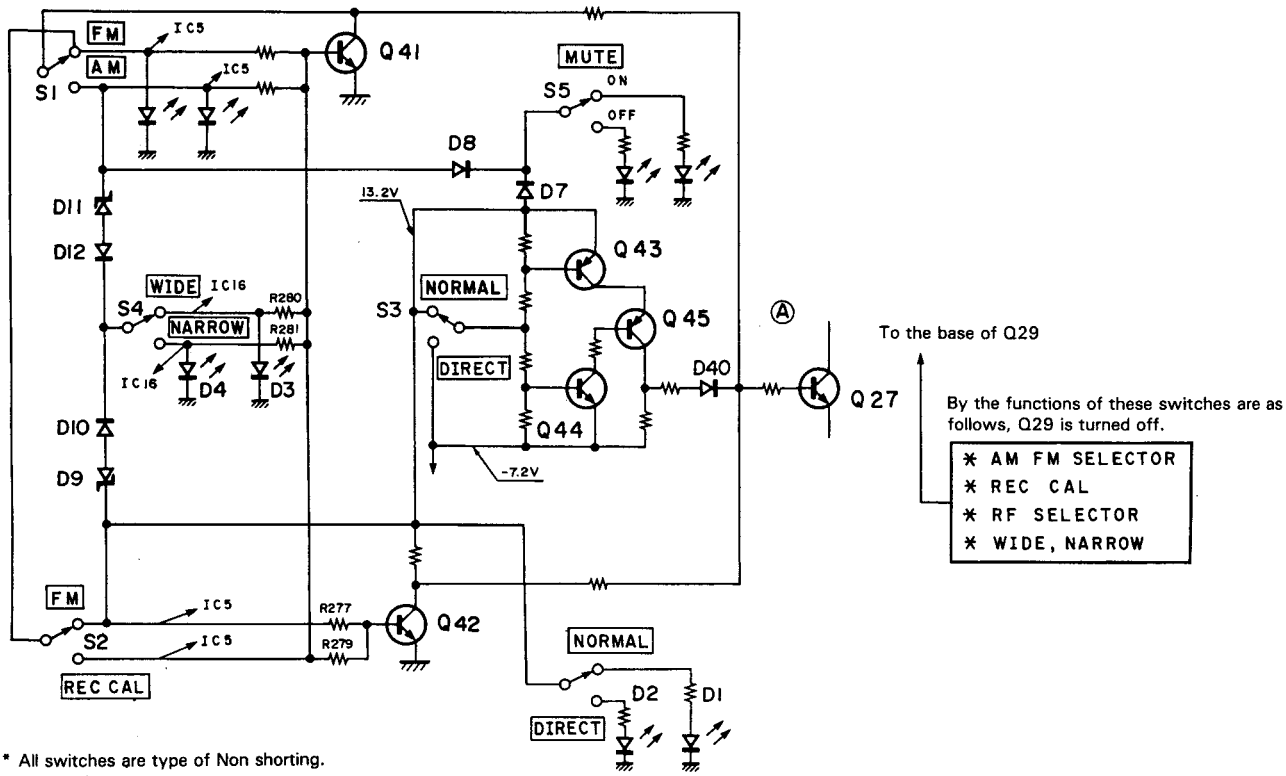
1) T meter control
2) AFC control
3) Muting relay control

The mode switch circuit uses transistors Q41 through Q45 and the following switches.

S1: FM - AM selector
S2: FM - REC CAL
S3: RF selector (DIRECT - NORMAL)
S4: IF BAND (WIDE - NARROW)

Muting signal is sent to the base of Q27 through Q41 ~ 45 when operating the above switches (non-shorting type) to mute the output signal.

The functions of these switches are as follows.



* All switches are type of Non shorting.

Fig. B

1) S1: Controls Q41.
About −4.0 V is applied to the base of Q41 while the switch is being operated. During this period, the collector level becomes high. This high level is applied to the base of Q27 to turn it on. Then, a low level is applied to the base of Q29 through R246 (47 kΩ) and Q29 is turned off.

2) S2: Controls Q42.
About −2.9 V is applied to the base of Q42 to turn it off while the switch is being operated. The collector level of Q42 is high so that Q27 is on and Q29 is off.

3) S3: Controls Q43 through Q45.

<NORMAL position>

In this position, the base and emitter of Q43 are at the same level and Q43 is off. Although Q44 is biased, it cannot go on because Q43 is off. Therefore, Q45 is off and its collector level is low.

<DIRECT position>

In this position, the base and emitter of Q44 are at the same level and Q44 is off. Although Q43 is biased, it cannot go on because Q44 is off. Therefore, Q45 is off and its collector level is low.

CIRCUIT DESCRIPTION

<While the switch is being operated>

While the switch is being operated, both Q43 and Q44 are biased and Q44 is turned on: this results in application of bias to Q45 so that it goes on. Therefore, the collector level of Q45 is high.

4) S4: Controls Q41.

A low level voltage is applied to the base of Q41 while the switch is being operated. During this period, Q41 is off and its collector level becomes 4.5 V. This voltage is applied to the base of Q27, so Q27 is on and Q30 is off. Q29 (together with Q28 and Q30) forms the AND gate for muting relay control. Therefore, the relay cannot be turned if any of the three is off, and the audio output is muted. The table below shows the voltages and operation of these transistors in each mode.

	Q41	Q42	Q43	Q44	Q45
FM⟷AM	−4.0 V	−3.8 V			
AM, FM		0.6 V			
WIDE⟷NARROW	0 V				
FM⟷REC CAL	0.2 V				
NORMAL			13.2 V	−6.5 V	−7.2 V
DIRECT			12.6 V	−7.2 V	12.6 V

	Q43	Q44	Q45 (Collector)
By NORMAL	OFF		OFF (Low)
By DIRECT		OFF	OFF (Low)
While the switch is being operated	ON	ON	ON (Hi)

CIRCUIT DESCRIPTION

OPERATION OF SWITCH ICs

This unit uses switching ICs IC5, IC13 and IC16.

[IC13] Performs the follwing switching functions.

(Switch operation)

1) Automatic quieting control. (Shorted during weak signal reception)
2) WIDE/NARROW switching. (Separation)
3) Hight frequency reception compensation of stereo. (Shorted during stereo signal reception)

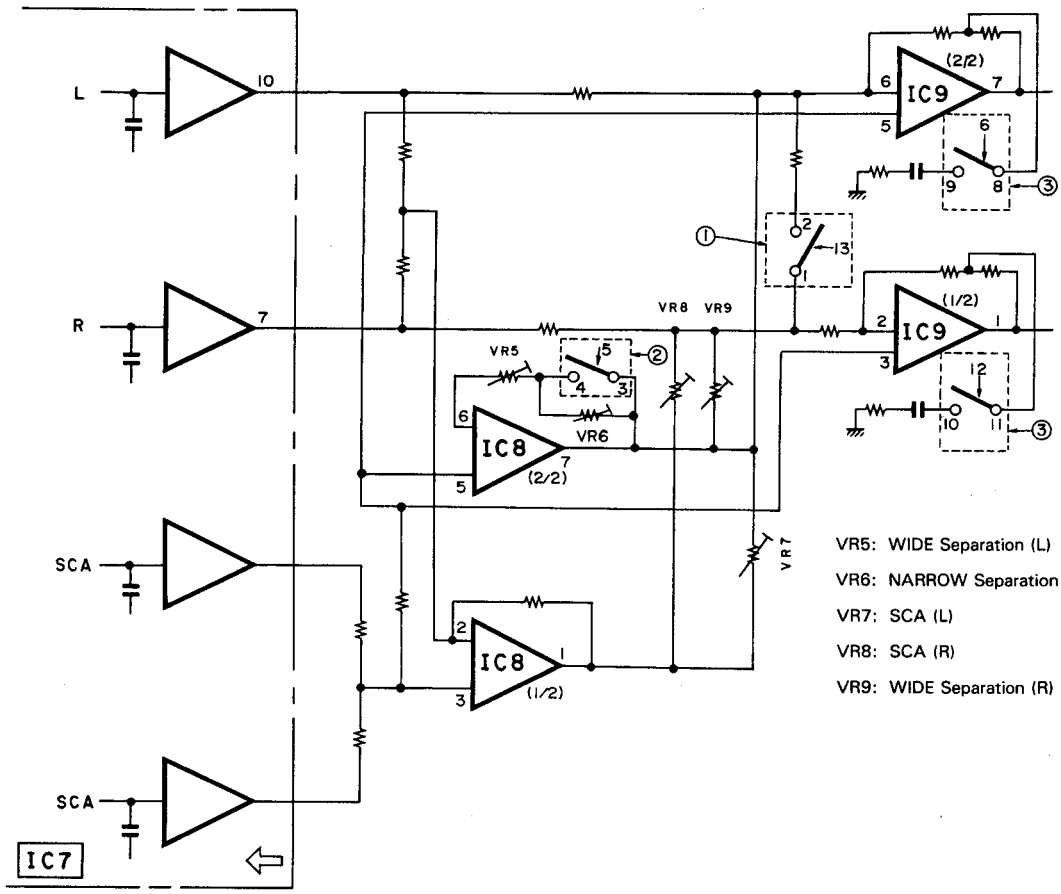


Fig. C

1) Switch for automatic quieting control [IC13-(1/4)]

This switch is controlled by the signal from the S meter circuit shown in Fig. D.

The output signal from S meter drivers Q7 and Q8 is applied to pin 2 of IC19-(1/2). (About 1.2 V is applied when there is sufficient signal strength; otherwise, about 0 V is applied.) The level at pin 1 of IC19-(1/2) is high when the signal strength is not sufficient. This level is applied to pin 13 of IC13-(1/4) so that the switch is shorted; that is, blending is performed.

2) Switch for separation control [IC13-(2/4)]

The level applied to pin 5 of IC13 is controlled by WIDE/NARROW switch S4. The pin 5 level is 6.4 V at WIDE and −5.8 V at NARROW position. The switch is shorted when S4 is in the WIDE position; otherwise, it is open. WIDE separation is adjusted by VR5 (L-ch), and NARROW separation is adjusted by VR6.

CIRCUIT DESCRIPTION

3) Switch for high frequency response compensation [IC13-(3/4) and IC13-(4/4)]

This switch (controlled by S5 and IC7) is shorted in the STEREO mode. S5 applies +B or −B to the emitter of Q38, depending on the setting of the switch. In the STEREO mode, about −5.7 V is applied to the base of Q39 from pin 15 of IC7; about 6.6 V is applied in the MONO mode. In the stereo mode, Q39 is on and its collector level is high (about 7.0 V), so both IC13-(3/4) and IC13-(4/4) are on and pins 8 and 11 are shorted. Therefore, pin 1 of IC9-(1/2) and pin 7 of IC9-(2/2) are grounded via C and R; this alters the frequency response at high frequencies. IC17-(6/6), connected between the base and collector of Q38, applies positive feedback to the base of Q38 to shorten the compensation attack rate, which may be elongated by the slow fall of the collector level of Q28 when the power is turned on.

CIRCUIT DESCRIPTION

IF BAND Switching

IC16 is controlled by both the S meter circuit and S4.

[FM reception]

The IF band width is switched by S4.

<WIDE position>

0 V is applied across R14 and R16 and D3 and D4 are off. A high level voltage is applied to the anodes of D1 and D2 so that they go on. Therefore, the IF signal passes through the WIDE path (R12) and is applied to pin 7 of IC2.

<NARROW position>

D1 and D2 are off, and D3 and D4 are on. Therefore, the signal passes through CF2 and 3 is applied to pin 7 of IC2.

[AM reception]

IC16 is controlled by the S meter circuit and S4 as shown in Figures D and E.

1) S meter circuit

The level appearing at the emitters of Q7 and Q8 is applied to pin 2 of IC19 (1/2). When a broadcast is tuned, the level applied is high and a low level voltage is output from pin 1. This low level signal is applied to pin 11 of IC17 (5/6) through a delay circuit consisting of D19 and R192. Then, a high level voltage is output from pin 10 and is applied to pin 9, while a low level voltage is output from pin 8 of IC17 (4/6). When no signal is received, the emitter voltage level of Q7 and Q8 is low. Therefore, the level at pin 10 of IC17

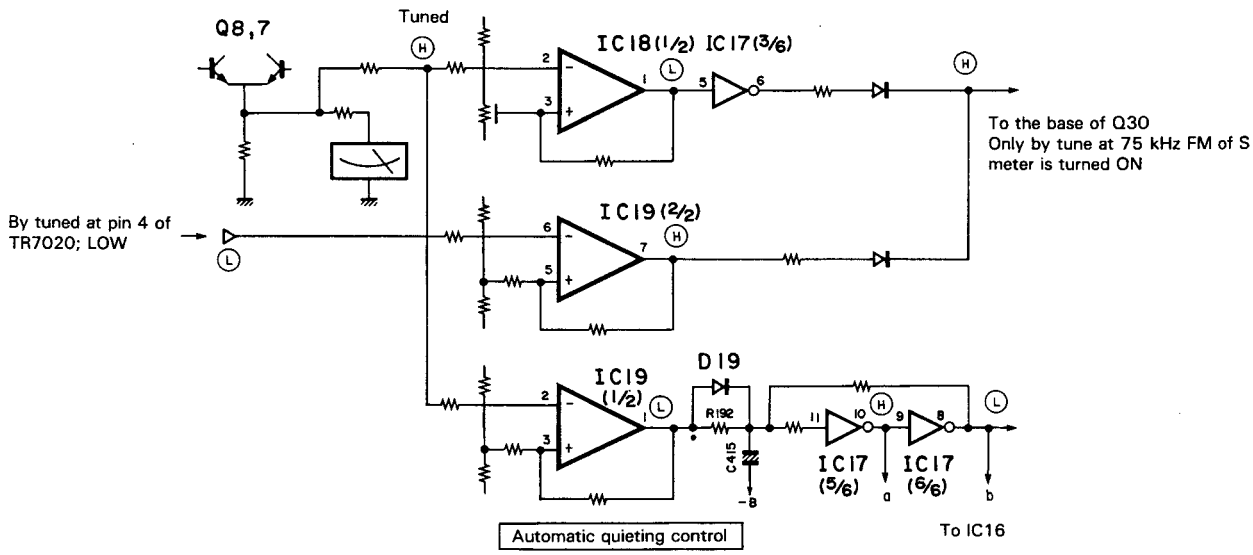


Fig. D

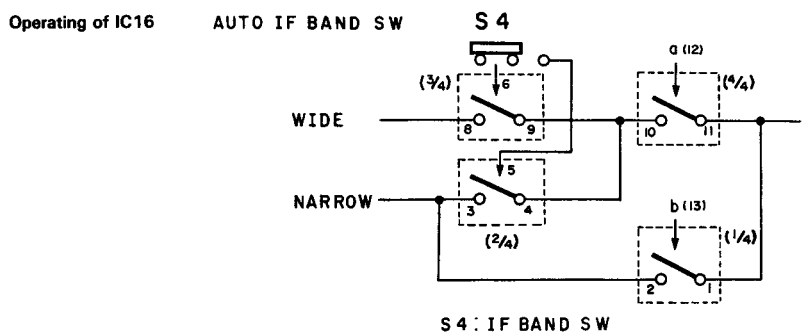


Fig. E

CIRCUIT DESCRIPTION

(5/6) is low and that at pin 8 of IC17 (4/6) is high. The signal from pin 10 of IC17 (5/6) is applied to pins 12 of IC16 (4/4) and pin 8 of IC17 (4/6) to pin 13 of IC16 (1/4) in Fig. E as shown in Fig. D.

2) S4

The WIDE signal is applied to pin 8 of IC16 (3/4) from pin 13 of IC20 and the NARROW signal is applied to pin 3 of IC16 (2/4). When S4 is in the WIDE position, about 6.4 V is applied to pin 6 of IC16 (3/4) and −5.8 V is applied to pin 5 of IC16 (2/4). This causes the WIDE signal to pass through IC16 (3/4) and IC16 (4/4) to pin 5 of IC14 (2/2).

<NARROW position>

6.5 V is applied to pin 5 of IC16 (2/4) and −5.8 V is applied to pin 6 of IC16 (3/4), so IC16 (2/4) goes on and IC16 (3/4) goes off. The NARROW signal is applied to pin 5 of IC14 (2/2) through IC16 (2/4) and IC16 (4/4).

<Automatic IF band switching in the AM mode>

IC16 (1/4) and IC16 (3/4) automatically switch the IF bandwidth from WIDE to NARROW when the signal strength drops while S4 set to the WIDE position. These logics are controlled by the signals from pins 10 and 8 of IC17.

When the signal is strong enough, IC16 (4/4) goes on and IC16 (1/4) goes off. If the signal level drops, the levels at pins 10 and 8 of IC17 are inverted so that IC16 (4/4) is turned off and IC16 (1/4) is turned on. Thus, the NARROW signal is applied to pin 5 of IC14 (2/2) through IC16 (1/4).

[FM reception]

The signal from the S meter circuit is applied to pin 13 of IC13 (1/4) to operate the automatic quieting control circuit when the signal is weak and blends the L and R signals.

CIRCUIT DESCRIPTION

[IC5]

This IC is a quad bilateral switch that turns on the REC CAL signal and switches between AM and FM. It also alters the frequency response while switching is being done.

<FM>

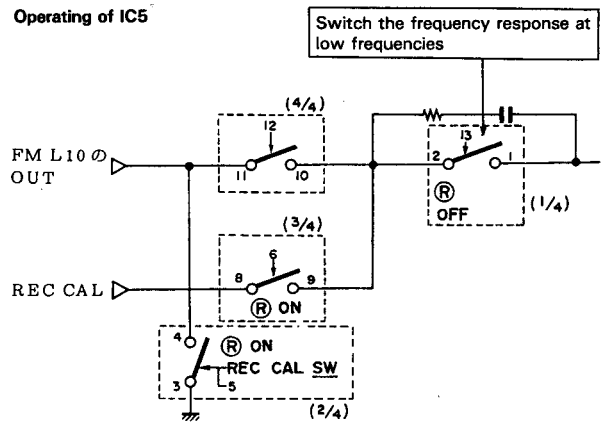
5.5 V is applied to pin 12 of IC5-(4/4) and pins 10 and 11 are shorted when S1 is in the FM position. Therefore, the signal from L10 (B.B.F) is applied to pin 2 of IC5-(1/4). When the tuning knob is touched (in the unlocked state), the level at pin 7 of IC18-(2/2) becomes low, and this low level voltage is applied to pin 1 of IC17-(1/6). A low level (about −7.2 V) also appears at pin 4 of IC17-(2/6), and is applied to pin 13 of IC5-(1/4). Therefore, bilateral switch between pin 1 and 2 of IC5-(1/4) is open and the audio output is muted.

When the tuning knob is not being touched, a high level voltage (about 6.5 V) is applied to pin 13 of IC5-(1/4) so that pins 1 and 2 are shorted and the received signal is applied to multiplexer IC7.

<REC CAL and AM>

When S2 is in the REC CAL position, a high level voltage is applied to both pin 5 of IC5-(2/4) and pin 6 of IC5-(3/4).

Therefore as shown in Fig. F, pin 11 of IC5-(4/4) is grounded by IC5-(2/4) to cut the FM signal path, and pins 8 and 9 of IC5 (3/4) are shorted so that the REC CAL signal from pin 10 of IC3 is applied to pin 2 of IC5-(1/4). IC5-(1/4) also switches the frequency response at low frequencies.



CIRCUIT DESCRIPTION

The functions of components are explained below.

Q2	Goes on and off according to the output signal of the noise amplifier (IC3: TR7020). Emitter voltage is 7.2 V when ON and 0.6 V when OFF (−3.6 V when a signal is correctly tuned in). However, the collector level is forcibly raised to H to short the FMT meter when the tuning knob is released.
Q9	Shorts AM T meter while the power is on.
Q10	FM T meter short
Q11	AFC ON-OFF Switch
Q12	REC CAL Switch
Q13	Touch sensor
Q16	Collector: FM front end +B Base: AM +B
Q26	Delays charging C176 when the power is turned on. When the power is turned off, is turned on by the discharge current of C175 to discharge C176 so that the relay is turned off.
Q27	Shorts C178 while switches are being operated.
Q28	Controls muting when the power is turned on or off.
Q29	Controlled by the function switches.

CIRCUIT DESCRIPTION

Q30 Controlled by the tuning condition.

Q31 Bypasses Q30 when REC CAL is on.

Q33 Inverts the muting reset signal.

Q35 Goes on when the touch switch is released.

Q36 Goes on when muting is reset. Controlled by Q28, Q29 and Q30.

} Tuning condition.

Generates the muting signal when NORMAL to DIRECT switching is performed.

Q37 Inverts the control signal for Q35 and Q36.

Q38 Stereo LED driver.

	Q38			Q39		
	E	C	B	E	C	B
AM						
Untuned	7.1	—	7.1	—	−7.1	—
STEREO Received	7.1	7.1	6.5	7.1	7.0	6.4
MONO Received	7.2	7.2	6.6	7.2	−7.1	6.6
Compulsion MONO	−7.2	−5.7	−5.7	−5.7	−7.2	−6.1
Compulsion MONO when the MONO is received	−7.2	−5.3	−5.7	−5.3	−7.2	0

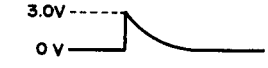
Q40 POWER ON AM T meter short.

Q41 Generates the muting signal when mode switches (WIDE — NARROW, AM — FM, REC CAL) are operated. Collector level is 0 V when ON and 4.4 V when OFF. **(Fig. a)**

Q42 The muting signal when the REC CAL switch is ON.
NO; 0 V
OFF; 3.0 V **(Fig. b)**
FM to AM switching. **(Fig. c)**

(Fig. a)

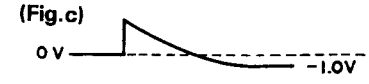
(Fig. b)



Q43 } The muting signal when NORMAL to DIRECT switching.
Q44 }

Q45 Q45 Collector ON 13.0 V
OFF −7.2 V } To base of Q27.

(Fig.c)



ADJUSTMENT

NO.	ITEM	TEST EQUIPMENT SETTING	SYSTEM CONNECTION	TUNER (RECEIVER) SETTING	ALIGNMENT POINTS	ALIGN FOR	FIG. NO.
FM SECTION SELECTOR: FM MODE: AUTO ST IF BAND: WIDE FM RF SEL: NORMAL MUTE LEVEL: 1 FM REC CAL: OFF							
1	**S METER**	(A) 95.0 MHz 0 dev 60 dB (ANT INPUT)	S meter	95.0 MHz IF BAND: NARROW	VR13	Deflection: 4.5	
2	**WIDE GAIN (1)**	(A) 95.0 MHz 0 dev	S meter	95.0 MHz IF BAND: NARROW	ANT input (SG)	Deflection: 2.0	
3	**WIDE GAIN (2)**	(A) 95.0 MHz 0 dev	S meter	95.0 MHz	VR1	Deflection: 2.0	
4	**DISCRIMINATOR (1)**	(A) 95.0 MHz 1 kHz ± 75 kHz dev	(B)	95.0 MHz MODE: MONO	Tuning knob	Adjust the tuning knob so that the same amount of noise is observed at the top and bottom of the output waveform with a weak signal.	
5	**DISCRIMINATOR (2)**	(A) 95.0 MHz 1 kHz ± 75 kHz dev 60 dB (ANT INPUT)	Connect a DC voltmeter between pins 3 and 11 of IC3	95.0 MHz MODE: MONO	L4	0 V	(a)
6	**2ND OSC**	(A) 95.0 MHz 0 dev	Connect a frequency counter to pin 2 of IC2 to measure f_1 and to pin 1 of IC4 measure f_2.	95.0 MHz	L6	Adjust L6 so that the frequencies satisfy the following equation. $f_2 = 9/49\ f_1$ Ex. $f_1 = 10.70000$ MHz, $f_2 = 1.9653$ MHz	(b) (c)
7	**REC CAL**	(A) 95.0 MHz 1 kHz ± 75 kHz dev	(B)	95.0 MHz REC CAL: OFF→ON	VR2	Adjust VR2 so that the ouptut level becomes −6 dB when REC CAL is ON (where 0 dB refers to the output level when REC CAL is OFF).	
8	**TOUCH SENSOR OSC FREQUENCY**	–	Connect a frequency counter to the emitter of Q13.	–	L18	400 kHz	(d)
9	**VCO**	(A) 95.0 MHz 1 kHz ± 75 kHz dev 60 dB (ANT INPUT)	Connect the TP on the anode side of D44 to the TP of R68 (connected to pin 18 of IC7). Connect a frequency counter to the 19 kHz TP (with the TP of R61 connected to pin 28 of IC7).	95.0 MHz	VR4	19.00 kHz	(e)
10	**SCA (L), (R)**	(A) 95.0 MHz 67 kHz, 7.5 kHz dev Selector: L + R Pilot: ON 80 dB (ANT INPUT)	(B)	95.0 MHz	VR7 VR8	Minimum output	
MPX							
11	**SEPARATION WIDE (1)**	(C) 95.0 MHz 1 kHz ± 68.25 kHz (Dev) Selector: L Pilot: ON 80 dB (ANT INPUT)	(B)	95.0 MHz	VR5	Minimum crosstalk from the other channel.	

ADJUSTMENT

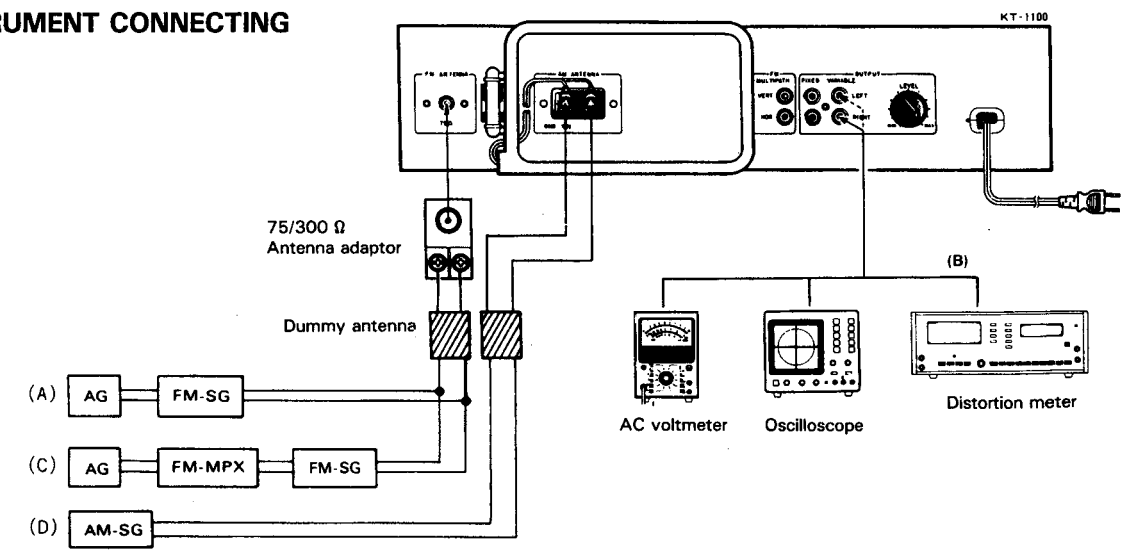
NO.	ITEM	TEST EQUIPMENT SETTING	SYSTEM CONNECTION	TUNER (RECEIVER) SETTING	ALIGNMENT POINTS	ALIGN FOR	FIG. NO.
12	**SEPARATION WIDE (2)**	(C) 95.0 MHz 1 kHz ± 68.25 kHz (Dev) Selector: R Pilot: ON 80 dB (ANT INPUT)	(B)	95.0 MHz	VR9	Minimum crosstalk from the other channel.	
Be sure to adjust VR5 first.							
13	**SEPARATION NARROW (1)**	(C) 95.0 MHz 1 kHz ± 68.25 kHz (Dev) Selector: L or R Pilot: ON 80 dB (ANT INPUT)	(B)	95.0 MHz IF BAND: NARROW	VR6	Minimum crosstalk from the other channel.	
14	**DISTORTION STEREO**	(C) 95.0 MHz 1 kHz ± 68.25 kHz (Dev) Selector: L Pilot: ON 80 dB (ANT INPUT)	(B)	95.0 MHz IF BAND: NARROW	T1: (Front end)	Minimum distortion	
15					L4: (Quadrature)		
16	**SEPARATION WIDE (3)**	(C) 95.0 MHz 1 kHz ± 68.25 kHz (Dev) Selector: L or R Pilot: ON 80 dB (ANT INPUT)	(B)	95.0 MHz	VR5 (L) VR9 (R)	Minimum crosstalk from the other channel.	
17	**SEPARATION WIDE (4)**	(C) 95.0 MHz 10 kHz ± 68.25 kHz (Dev) Selector: L Pilot: ON 80 dB (ANT INPUT)	(B)	95.0 MHz	L10: B.B.F (Yellow core only)	Minimum crosstalk from the other channel.	
Repeat alignments 10 and 11.							
18	**SEPARATION NARROW (2)**	(C) 95.0 MHz 1 kHz ± 68.25 kHz (Dev) Selector: L or R Pilot: ON 80 dB (ANT INPUT)	(B)	95.0 MHz IF BAND: NARROW	VR6	Minimum crosstalk from the other channel.	
19	**PILOT CANCELLER (1)**	(C) 95.0 MHz 0 (Dev) Selector: L or R Pilot: ON 80 dB (ANT INPUT)	(B)	95.0 MHz	VR3	19 kHz Minimum ouput	
20	**PILOT CANCELLER (2)**	(C) 95.0 MHz 0 dev Selector: L or R Pilot: ON 80 dB (ANT INPUT)	(B)	95.0 MHz	L19	Same output (L, R)	
Repeat alignments 18 and 19.							

ADJUSTMENT

NO.	ITEM	TEST EQUIPMENT SETTING	SYSTEM CONNECTION	TUNER (RECEIVER) SETTING	ALIGNMENT POINTS	ALIGN FOR	FIG. No.
AM SECTION SELECTOR: AM IF BAND: WIDE			Adjust the AM reception with the loop antenna.				
(1)	**IFT**	(D) 1000 kHz 400 Hz, 30% mod	(B)	1000 kHz	L16	Maximum amplitude and symmetry of the oscilloscope display.	
(2)	**RF ALIGNMENT (AM) (1)**	(D) 600 kHz 400 Hz, 30% mod	(B)	600 kHz IF BAND: NARROW MUTE: OFF	L14, 15	Maximum amplitude and symmetry of the oscilloscope display.	
(3)	**RF ALIGNMENT (AM) (2)**	(D) 1400 kHz 400 Hz, 30% mod	(B)	1400 kHz IF BAND: NARROW MUTE: OFF	TC3, 5, 7	Maximum amplitude and symmetry of the oscilloscope display.	
(4)	**S METER**	(D) 1000 kHz 400 Hz, 30% mod 60 dB (ANT INPUT)	S meter	1000 kHz	VR12	S meter deflection: 4.5	
(5)	**T METER**	(D) 1000 kHz 400 Hz, 30% mod 60 dB (ANT INPUT)	(B)	1000 kHz	VR11	Center	
FREQUENCY DISPLAY SECTION							
1	**FREQUENCY DISPLAY FM (AM)**	(A) 95.1 MHz (1100 kHz) Connect a resistor (47 kΩ) between TP8 and GND	FREQUENCY DISPLAY	95.1 MHz (1100 kHz)	VR1 (VR2)	Adjust VR1 (VR2) so that the 100 Hz digit stops blinking	

Note: Be sure to keep the loop antenna away from metal objects during AM adjustment.

TEST INSTRUMENT CONNECTING



REGLAGES

N°	ITEM	RAGLAGE DE L'APPAREILLAGE	RECCORDEMENTS DU SYSTEME	REGLAGE DU TUNER (AMPLI-TUNER)	POINTS DE L'ALIGNEMENT	ALIGNER POUR	FIG. N°
SECTION MF	SELECTOR: FM MODE: AUTO ST IF BAND: WIDE FM RF SEL: NORMAL MUTE LEVEL: 1 FM REC CAL: OFF						
1	**INDICATEUR DE CHAMP**	(A) 95,0 MHz 0 dév 60 dB (Entrée ANT)	Indicateur de champ	95,0 MHz IF BAND: NARROW	VR13	Déviation de l'indicateur de champ: 4,5	
2	**GRAND GAIN (1)**	(A) 95,0 MHz 0 dév	Indicateur de champ	95,0 MHz IF BAND: NARROW	Entrée ANT (SG)	Déviation de l'indicateur de champ: 2,0	
3	**GRAND GAIN (2)**	(A) 95,0 MHz 0 dév	Indicateur de champ	95,0 MHz	VR1	Déviation de l'indicateur de champ: 2,0	
4	**INDICATEUR A ZERO CENTRAL (1)**	(A) 95,0 MHz 1 kHz ± 75 kHz dév	(B)	95,0 MHz MODE: MONO	Bouton d'accord	Adjuster le bouton d'accord de façon que la même quantité du bruit puisse être observé au sommet et en bas de la forme d'onde de sortie sous des conditions d'alimentation de signal faible.	
5	**INDICATEUR A ZERO CENTRAL (2)**	(A) 95,0 MHz 1 kHz ± 75 kHz dév 60 dB (Entrée ANT)	Connecter un voltmètre cc entre les tiges 3 et 11 du CL3.	95,0 MHz MODE: MONO	L4	0 V	(a)
6	**2ND OSC**	(A) 95,0 MHz 0 dév	Connecter un compteur de fréquence à la tige 2 du CL2 afin de mesure la fréquence 1 et à la tige 1 du CL4 pour mesurer la fréquence 2.	95,0 MHz	L6	Régler L6 de manière à ce que les fréquences soient conformes à l'équation suivante. Fréquence 2 = 9/49 de fréquence 1 Ex. Fréquence 1 = 10.70000 MHz, Fréquence 2 = 1,9653 MHz	(b) (c)
7	**REC CAL**	(A) 95,0 MHz 1 kHz ± 75 kHz dév	(B)	95,0 MHz REC CAL: OFF→ON	VR2	Ajuster VR2 de façon à ce que le niveau de sortie soit −6 dB lorsque REC CAL est placé sur ON (0 dB étant le niveau de sortie lorsque REC CAL est placé sur OFF).	
8	**TOUCH SENSOR OSC FREQUENCY**	—	Connecter un compteur de fréquence à l'émetteur de Q13.	—	L18	400 kHz	(d)
9	**VCO**	(A) 95,0 MHz 1 kHz ± 75 kHz dév 60 dB (Entrée ANT)	Connecter le TP sur le côté anode de D44 au TP de R68 (connecté à la tige 18 de CL7). Connecter un compteur de fréquence au TP19 kHz (avec le TP de R61 connecté à la tige 28 de CL7).	95,0 MHz	VR4	19,00 kHz	(e)
10	**SCA (G)**	(A) 95,0 MHz 67 kHz, 7,5 kHz dév Selection: L + R Pilote: ON 80 dB (Entrée ANT)	(B)	95,0 MHz	VR7	Sortie minimale	
11	**SCA (D)**	Idem	Idem	Idem	VR8	Idem	
MPX							
12	**SEPARATION LARGE (1)**	(C) 95,0 MHz 1 kHz ± 68,25 kHz (dév) Selector: L Pilote: ON 80 dB (Entrée ANT)	(B)	95,0 MHz	VR5	Sortie minimale.	

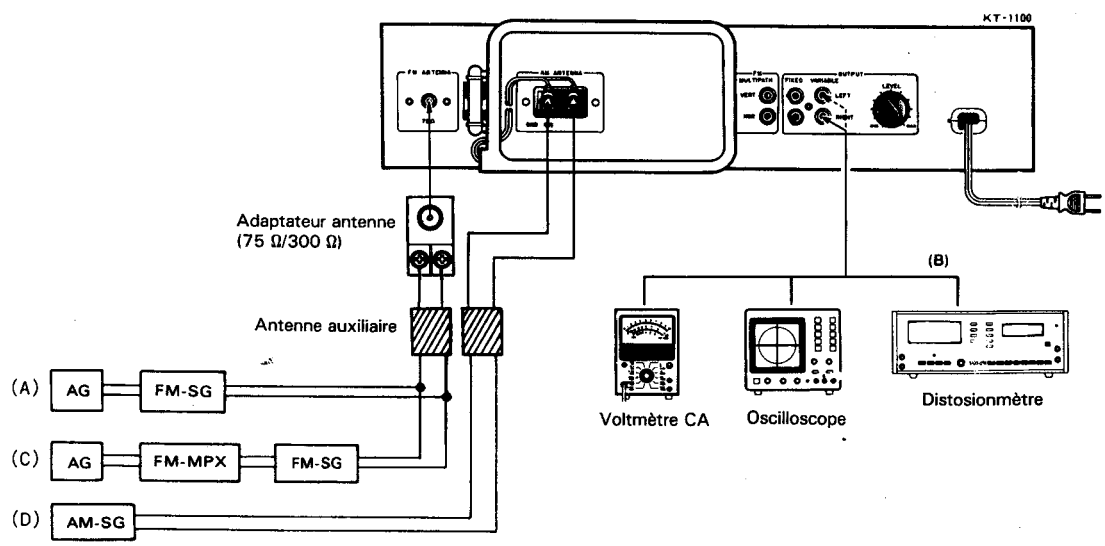
REGLAGES

N°	ITEM	RAGLAGE DE L'APPAREILLAGE	RECCORDEMENTS DU SYSTEME	REGLAGE DU TUNER (AMPLI-TUNER)	POINTS DE L'ALIGNEMENT	ALIGNER POUR	FIG. N°
13	**SEPARATION LARGE (2)**	(C) 95,0 MHz 1 kHz ± 68,25 kHz (dév) Selection: R Pilote: ON 80 dB (Entrée ANT)	(B)	95,0 MHz	VR9	Diaphonie minimale	
Veiller à bien régler d'abord VR5.							
14	**SEPARATION ETROIT (1)**	(C) 95,0 MHz 1 kHz ± 68,25 kHz (dév) Selection: L ou R Pilote: ON 80 dB (Entrée ANT)	(B)	95,0 MHz IF BAND: NARROW	VR6	Diaphonie minimale	
15	**DISTORSION STEREO**	(C) 95,0 MHz 1 kHz ± 68,25 kHz (dév) Selection: L Pilote: ON 80 dB (Entrée ANT)	(B)	95,0 MHz IF BAND: NARROW	T1: (Tête H.T.)	Distorsion minimale	
16					L4: (Quadrature)		
17	**SEPARATION LARGE (3)**	(C) 95,0 MHz 1 kHz ± 68,25 kHz (dév) Selection: L ou R Pilote: ON 80 dB (Entrée ANT)	(B)	95,0 MHz	VR5 (G) VR9 (D)	Diaphonie minimale	
18	**SEPARATION LARGE (4)**	(C) 95,0 MHz 10 kHz ± 68,25 kHz (dév) Selection: L Pilote: ON 80 dB (Entrée ANT)	(B)	95,0 MHz	L10: B.B.F (Le noyau jaune seulement)	Diaphonie minimale	
Repéter le alignements 10 et 11.							
19	**SEPARATION ETROIT (2)**	(C) 95,0 MHz 1 kHz ± 68,25 kHz (dév) Selection: L ou R Pilote: ON 80 dB (Entrée ANT)	(B)	95,0 MHz IF BAND: NARROW	VR6	Diaphonie minimale	
20	**CIRCUIT SUPPRESSION DE SIGNAL PILOTE (1)**	(C) 95,0 MHz 0 (dév) Selection: L ou R Pilote: ON 80 dB (Entrée ANT)	(B)	95,0 MHz	VR3	19 kHz Sortie minimale	
21	**CIRCUIT SUPPRESSION DE SIGNAL PILOTE (2)**	(C) 95,0 MHz 0 dév Selection: L ou R Pilote: ON 80 dB (Entrée ANT)	(B)	95,0 MHz	L19	Sortie même (L, R)	
Repéter le alignements 18 et 19.							

REGLAGES

N°	ITEM	RAGLAGE DE L'APPAREILLAGE	RECCORDEMENTS DU SYSTEME	REGLAGE DU TUNER (AMPLI-TUNER)	POINTS DE L'ALIGNEMENT	ALIGNER POUR	FIG. N°
SECTION MA SELECTOR: AM IF BAND: WIDE.							
(1)	**IFT**	(D) 1000 kHz 400 Hz, 30% mod	(B)	1000 kHz	L16	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
(2)	**ALIGNEMENT H.T. (MA) (1)**	(D) 600 kHz 400 Hz, 30% mod	(B)	600 kHz IF BAND: NARROW MUTE: OFF	L14, 15	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
(3)	**ALIGNEMENT H.T. (MA) (2)**	(D) 1400 kHz 400 Hz, 30% mod	(B)	1400 kHz IF BAND: NARROW MUTE: OFF	TC3, 5, 7	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
(4)	**INDICATEUR DE CHAMP**	(D) 1000 kHz 400 Hz, 30% mod 60 dB (Entrée ANT)	Indicateur de champ	1000 kHz	VR12	Déviation de l'indicateur de champ: 4,5	
(5)	**INDICATEUR A ZERO CENTRAL**	(D) 1000 kHz 400 Hz, 30% mod 60 dB (Entrée ANT)	(B)	1000 kHz	VR11	Aiguille de l'indicateur à zéro central en position centrale.	
SECTION DE FREQUENCE ETALER							
1	**ETALEUR DE FREQUENCE MF, (MA)**	95,1 MHz (1100 kHz) Connecter une résistance de 47 kΩ entre les tiges TP8 et GND.	ETALEUR DE FREQUENCE	95,1 MHz (1100 kHz)	VR1 (VR2)	Ajuster les résistances variables VR1 (VR2) de façon que l'indicateur 100 kHz arrêtede s'allumer.	

Remarque: Il est recommandé d'utiliser l'antenne pour le réglage de repérage.



ABGLEICH

NR.	GEGENSTAND	PRÜFEINRICHTUNG-EINSTELLUNG	SYSTEM-ANSCHLÜSSE	TUNER (RECEIVER)-EINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FÜR	ABB. NR.
UKW- ABTEILUNG	SELECTOR: FM MODE: AUTO ST IF BAND: WIDE FM RF SEL: NORMAL MUTE LEVEL: 1 FM REC CAL: OFF						
1	**FELDSTÄRKE-INSTRUMENT**	(A) 95,0 MHz 0 Hub 60 dB (ANT-Eingang)	Feldstärke-instrument	95,0 MHz IF BAND: NARROW	VR13	Ausschlag: 4,5	
2	**FELDSTÄRKE-INSTRUMENT (WEIT) (1)**	(A) 95,0 MHz 0 Hub	Feldstärke-instrument	95,0 MHz IF BAND: NARROW	ANT-Eingang (SG)	Ausschlag: 2,0	
3	**FELDSTÄRKE-INSTRUMENT (WEIT) (2)**	(A) 95,0 MHz 0 Hub	Feldstärke-instrument	95,0 MHz	VR1	Ausschlag: 2,0	
4	**KANALMITTEN-ANZEIGER (1)**	(A) 95,0 MHz 1 kHz ± 75 kHz Hub	(B)	95,0 MHz MODE: MONO	Abstimm Knopf	Den Abstimmknopf so einstellen, daß an der oberen und unteren Grenze der Ausgangswellenform bei schwachem Signal dasselbe Geräusch auftritt.	
5	**KANALMITTEN-ANZEIGER (2)**	(A) 95,0 MHz 1 kHz ± 75 kHz Hub 60 dB (ANT-Eingang)	Einen Gleichspannungsmesser zwischen Stift 3 und 11 von IC3 anschließen.	95,0 MHz MODE: MONO	L4	0 V	(a)
6	**2ten OSZ**	(A) 95,0 MHz 0 Hub	Einen Frequenzzähler an Stift 2 von IC2 zur Messung von f_1, und an Stift 1 von IC4 zur Messung von f_2 anschließen.	95,0 MHz	L6	L6 so justieren, daß die Frequenzen die folgende Gleichung erfüllen: $f_2 = 9/49\ f_1$ Bsp. $f_1 = 10{,}70000$ MHz, $f_2 = 1{,}9653$ MHz	(b) (c)
7	**REC CAL**	(A) 95,0 MHz 1 kHz ± 75 kHz Hub	(B)	95,0 MHz REC CAL: OFF→ON	VR2	VR2 so einstellen, daß bei eingeschaltetem REC CAL ein Ausgangspegel von −6 dB erzielt wird (wobei 0 dB den Ausgangspegel bei ausgeschaltetem REC CAL darstellt).	
8	**TOUCH SENSOR OSC FREQUENCY**	—	Einen Frequenzzähler an den Emitter von Q13 anschließen.	—	L18	400 kHz	(d)
9	**SPANNUNGS-GEREGELTER OSZILLATOR**	(A) 95,0 MHz 1 kHz ± 75 kHz Hub 60 dB (ANT-Eingang)	Den TP auf der Anodenseite von D44 an den TP von R68 (an Stift 18 von IC7 angeschlossen) anschließen. Einen Frequenzzähler an den 19 kHz TP anschließen (wobei der TP von R61 an Stift 28 von IC7 angeschlossen ist).	95,0 MHz	VR4	19,00 kHz	(e)
10	**SCA (L), (R)**	(A) 95,0 MHz 67 kHz, 7,5 kHz Hub Selector: L + R Pilot: ON (10%) 80 dB (ANT-Eingang)	(B)	95,0 MHz	VR7 VR8	Minimaler Ausgang.	
MPX							
11	**STEREO KANAL TRENNUNG WEIT (1)**	(C) 95,0 MHz 1 kHz ± 68,25 kHz (Hub) Selector: L Pilot: ON 80 dB (ANT-Eingang)	(B)	95,0 MHz	VR5	Minimales Übersprechen.	

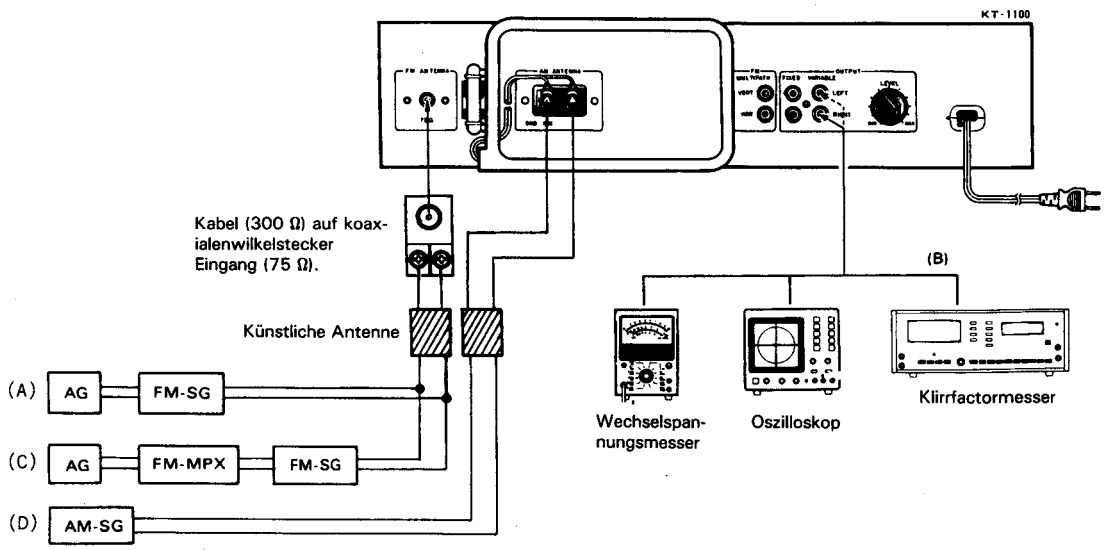
ABGLEICH

NR.	GEGENSTAND	PRÜFEINRICHTUNG-EINSTELLUNG	SYSTEM-ANSCHLÜSSE	TUNER (RECEIVER)-EINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FÜR	ABB. NR.
12	**STEREO KANAL TRENNUNG WEIT (2)**	(C) 95,0 MHz 1 kHz ± 68,25 kHz (Hub) Selector: R Pilot: ON 80 dB (ANT-Eingang)	(B)	95,0 MHz	VR9	Minimales Übersprechen.	
Darauf achten, zuerst VR5 zu justieren.							
13	**STEREO KANAL TRENNUNG SCHMAL (1)**	(C) 95,0 MHz 1 kHz ± 68,25 kHz (Hub) Selector: L oder R Pilot: ON 80 dB (ANT-Eingang)	(B)	95,0 MHz IF BAND: NARROW	VR6	Minimales Übersprechen.	
14	**KLIRRFAKTOR STEREO**	(C) 95,0 MHz 1 kHz ± 68,25 kHz (Hub) Selector: L Pilot: ON 80 dB (ANT-Eingang)	(B)	95,0 MHz IF BAND: NARROW	T1: (HF)	Minimale Klirr	
15					L4: (Quadratur)		
16	**STEREO KANAL TRENNUNG WEIT (3)**	(C) 95,0 MHz 1 kHz ± 68,25 kHz (Hub) Selector: L oder R Pilot: ON 80 dB (ANT-Eingang)	(B)	95,0 MHz	VR5 (L) VR9 (R)	Minimales Übersprechen.	
17	**STEREO KANAL TRENNUNG WEIT (4)**	(C) 95,0 MHz 10 kHz ± 68,25 kHz (Hub) Selector: L Pilot: ON 80 dB (ANT-Eingang)	(B)	95,0 MHz	L10: B.B.F (Nur gelber Kern)	Minimales Übersprechen.	
Abstimmungen 10 und 11 wiederholen.							
18	**STEREO KANAL TRENNUNG SCHMAL (2)**	(C) 95,0 MHz 1 kHz ± 68,25 kHz (Hub) Selector: L oder R Pilot: ON 80 dB (ANT-Eingang)	(B)	95,0 MHz IF BAND: NARROW	VR6	Minimales Übersprechen.	
19	**PILOT-LÖSCHER (1)**	(C) 95,0 MHz 0 (Hub) Selector: L oder R Pilot: ON 80 dB (ANT-Eingang)	(B)	95,0 MHz	VR3	19 kHz Minimaler Ausgang.	
20	**PILOT-LÖSCHER (2)**	(C) 95,0 MHz 0 Hub Selector: L oder R Pilot: ON 80 dB (ANT-Eingang)	(B)	95,0 MHz	L19	Selbe Ausgang	
Abstimmungen 18 und 19 wiederholen.							

ABGLEICH

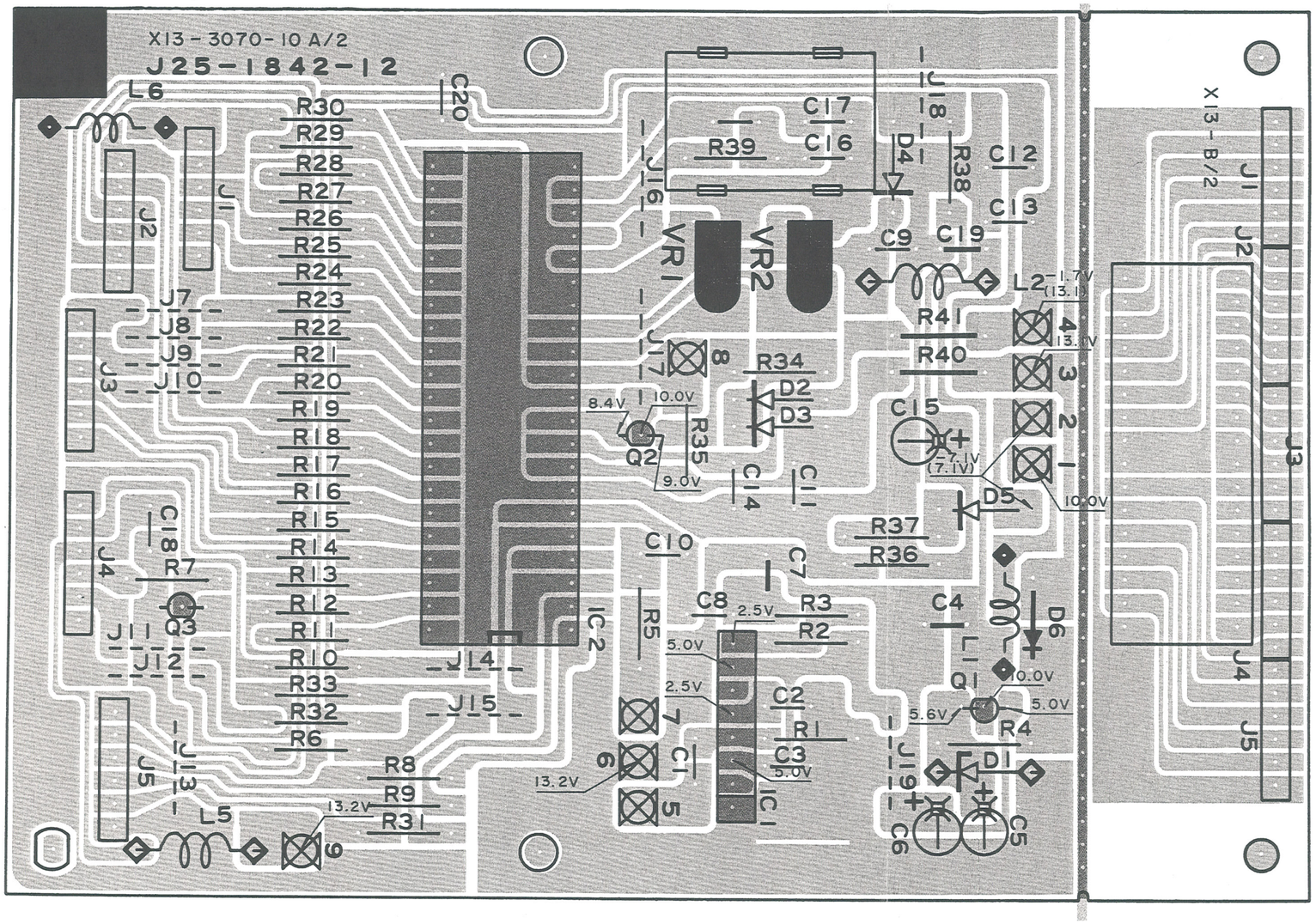
NR.	GEGENSTAND	PRÜFEINRICHTUNG-EINSTELLUNG	SYSTEM-ANSCHLÜSSE	TUNER (RECEIVER)-EINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FÜR	ABB. NR.
MW-ABTEILUNG SELECTOR: AM IF BAND: WIDE Abgleichen die MW-ABTEILUNG mit der Rahmenantennen.							
(1)	**IFT**	(D) 1000 kHz 400 Hz, 30% mod	(B)	1000 kHz	L16	Maximale Amplitude und Symmetrie des Oszilloskopbildes.	
(2)	**HF-ABGLEICH (MW) (1)**	(D) 600 kHz 400 Hz, 30% mod	(B)	600 kHz IF BAND: NARROW MUTE: OFF	L14, 15	Maximale Amplitude und Symmetrie des Oszilloskopbildes.	
(3)	**HF-ABGLEICH (MW) (2)**	(D) 1400 kHz 400 Hz, 30% mod	(B)	1400 kHz IF BAND: NARROW MUTE: OFF	TC3, 5, 7	Maximale Amplitude une Symmetrie des Oszilloskopbildes.	
(4)	**FELDSTÄRKE-INSTRUMENT**	(D) 1000 kHz 400 Hz, 30% mod 60 dB (ANT-Eingang)	Feldstärke-instrument	1000 kHz	VR12	S-meter Ausschlag: 4,5	
(5)	**KANALMITTEN-ANZEIGER**	(D) 1000 kHz 400 Hz, 30% mod 60 dB (ANT-Eingang)	(B)	1000 kHz	VR11	Nadel des Kanalmitten-Anzeigers muß auf Mittellinie stehen.	
FREQUENZ ANZEIGER ABTEILUNG							
1	**FREQUENZ-ANZEIGER UKW (MW)**	(A) 95,1 MHz (1100 kHz) Einen Widerstand (47 kΩ) zwischen Stift TP8 und GND anschließen	Frequenz-anzeiger	95,1 MHz (1100 kHz)	VR1 (VR2)	Den Regelwiderstand VR1 so einstellen, daß der Rechte seite anzeiger des Frequenzzählers (100 kHz anzeige) Hält aufleuchtet wird.	

Hinweis: Darauf achten, die Rahmenantenne bei der AM-Justage von Metallgegenständen fernzuhalten.

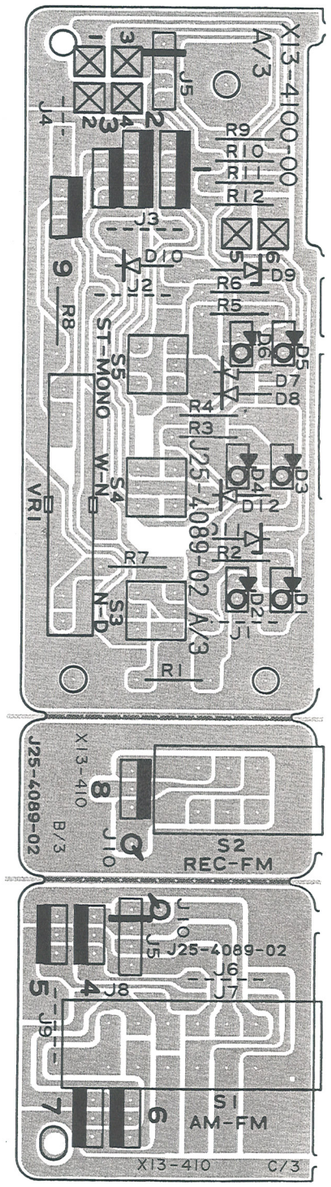


PC BOARD

SUB-CIRCUIT UNIT (X13-3072-71)
Component side view



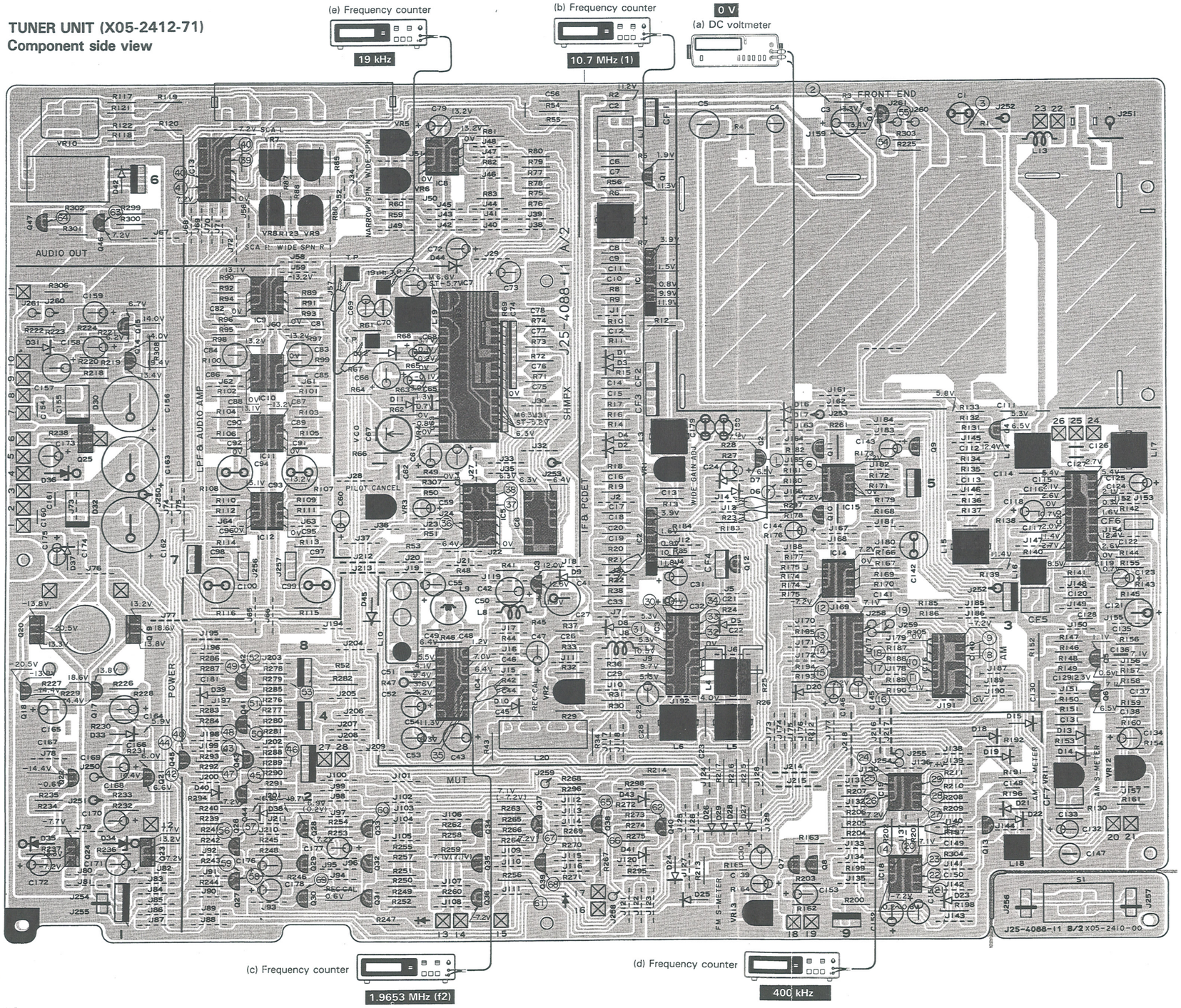
SUB-CIRCUIT UNIT (X13-4102-71)
Component side view



Refer to the schematic diagram for the values of resistors and capacitors.
The PC board drawing is viewing from the side easy to check.

PC BOARD

TUNER UNIT (X05-2412-71)
Component side view



①	0.6 V AM −3.8 V SW OPERATION −3.8 V
②	FM 13.3 V AM 0 V
③	N 12.7 V D −7.0 V
④	W 3.7 V N 1.3 V
⑤	W 0 V N 5.8 V
⑥	LOCK 0 V
⑦	±6 V UN TUNE TO BELOW K −6 V
⑧	W −5.8 V N 6.5 V
⑨	W 6.4 V N −5.8 V
⑩	STRONG 7.0 V WEAK −7.1 V
⑪	STRONG −7.1 V WEAK 7.0 V
⑫	LOCK 6.3 V UN LOCK −6.0 V
⑬	LOCK 7.2 V UN LOCK −7.2 V
⑭	TUNE −5.8 V UN TUNE 6.5 V
⑮	TUNE 7.1 V UN TUNE −7.2 V
⑯	STRONG −7.2 V WEAK 7.2 V
⑰	STRONG 7.2 V WEAK −7.2 V
⑱	STRONG −6.1 V WEAK 6.6 V
⑲	FM −7.2 V AM 7.2 V
⑳	TUNE 1.2 V UN TUNE 0 V
㉑	1.1 V (TOUCH 0.8 V)
㉒	0.9 V (TOUCH 1.1 V)
㉓	6.1 V (TOUCH −5.8 V)
㉔	STRONG −5.8 V WEAK 6.5 V
㉕	STRONG 1.2 V WEAK 0 V

㉖	STRONG 0.5 V WEAK 0 V
㉗	TUNE 1.5 V UN TUNE 0.2 V
㉘	TUNE 0 V UN TUNE 2.7 V
㉙	TUNE 6.3 V UN TUNE −5.9 V
㉚	TUNE 2.5 V UN TUNE 0.4 V
㉛	TUNE 0 V UN TUNE 1.0 V
㉜	FM 2.9 V AM 5.0 V
㉝	FM 2.9 V AM 4.8 V
㉞	FM 2.9 V AM 3.1 V
㉟	FM 3.8 V AM 5.6 V
㊱	−3.3 V REC CAL 4.8 V
㊲	FM 5.0 V AM −3.3 V
㊳	LOCK 6.5 V UN LOCK −6.5 V
㊴	N −5.8 V W 6.4 V
㊵	MONO −7.2 V STEREO 7.0 V
㊶	STRONG −5.9 V WEAK 6.5 V
㊷	N −7.2 V D 12.6 V
㊸	N −6.8 V D 13.2 V
㊹	N⟶D 13.2 V
㊺	N −6.5 V D −7.2 V
㊻	N 13.2 V D −7.2 V
㊼	N 13.2 V D 12.6 V
㊽	FM 13.2 V
㊾	0 V AM⟶FM 4.5 V
㊿	AM⟶FM 4.5 V W⟶N 4.5 V REC CAL 4.5 V

(51)	AM⟶FM −4.0 V W⟶N 0 V FM⟶REC CAL 0.2 V
(52)	AM⟶FM −3.8 V AM · FM 0.6 V REC CAL AM⟶FM −2.9 V
(53)	REC CAL 13.2 V
(54)	FM 12.7 V AM 13.4 V
(55)	AM 0 V FM 13.4 V
(56)	POWER IS TURNED ON 0 V NORMAL 0.8 V
(57)	−6 V
(58)	SW OPERATION 0 V
(59)	SW OPERATION 0.6 V
(60)	7.1 V SW OPERATION −10.3 V
(61)	6.1 V (TOUCH −5.8 V)
(62)	POWER IS TURNED ON 1.5 V NORMAL 0.1 V
(63)	7.0 V (RELAY ON) 0 V (OFF)
(64)	0.1 V (RELAY ON) 13.2 (OFF)
(65)	ST 6.4 V COMPULSION MONO 5.6 V
(66)	ST 7.1 V COMPULSION MONO −7.2 V
(67)	ST 6.4 V COMPULSION MONO −6.0 V
(68)	ST 7.0 V COMPULSION MONO −5.6 V

(69)		FM	AM
	TUNE	0.6 V	0.6 V
	UN TUNE	−0.8V	—
	NO SIGNASL	−6.8V	−1.2V

Refer to the schematic diagram for the values of resistors and capacitors.
The PC board drawing is viewing from the side easy to check.

(X05-2412-71) (A/2)

FRONT END (W02-0056-15)

FM ANTENNA 75Ω

AM ANTENNA

Q1,2 : 3SK74
Q3 : 2SC461 D1 : IS2267
Q4,5 : 2SK161 D2~4 : ISS85

IC1,2	: μPC1163H	Q1	: 2SK125
IC3	: TR7020	Q2,16,18,22,32,33,37~39, 43,45,46	: 2SA999(E,F)
IC4	: TR4011	Q3,5~8,12,13,15,17,21,26~31, 34~36,40~42,44,47	: 2SC2320(E,F)
IC5,6,13,16	: MB84066BM	Q4	: 2SK161(Y)
IC7	: TR7040	Q9~11	: 2SK105(H,I)
IC8~11,15,18,19	: AN6556	Q14	: 2SC1735(E)
IC12	: NJM4560DN	Q20,24	: 2SB514(E,F)
IC14	: AN6552	Q23	: 2SD330(E,F)
IC17	: MB8069BM		
IC20	: LA1245		

	Q38		Q39	
	C	B	C	B
ST	7.2V	6.4V	7.0V	6.4V
COMPULSION MONO	-7.2V	5.6V	-5.6V	-6.0V

D1~12,15~29 : IS1555
D13,14 : 1N60
D30,32 : SIWB10
D31,33 : XZ-060
D34,35 : XZ-076
D37 : IS2076A
D38~45 : IS2076

2SC1735

2SA733(A)
2SA999
2SC2320
2SC945(A)
2SC1684

2SB514
2SD330

2SK105
2SK125

2SK161

NJM4560D-N

AN6552

TR4011

LA1245

μPC1163H

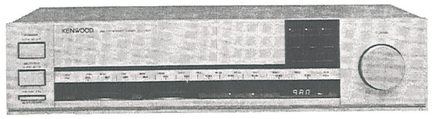
MB84066BM
MB84069BM

TR7020

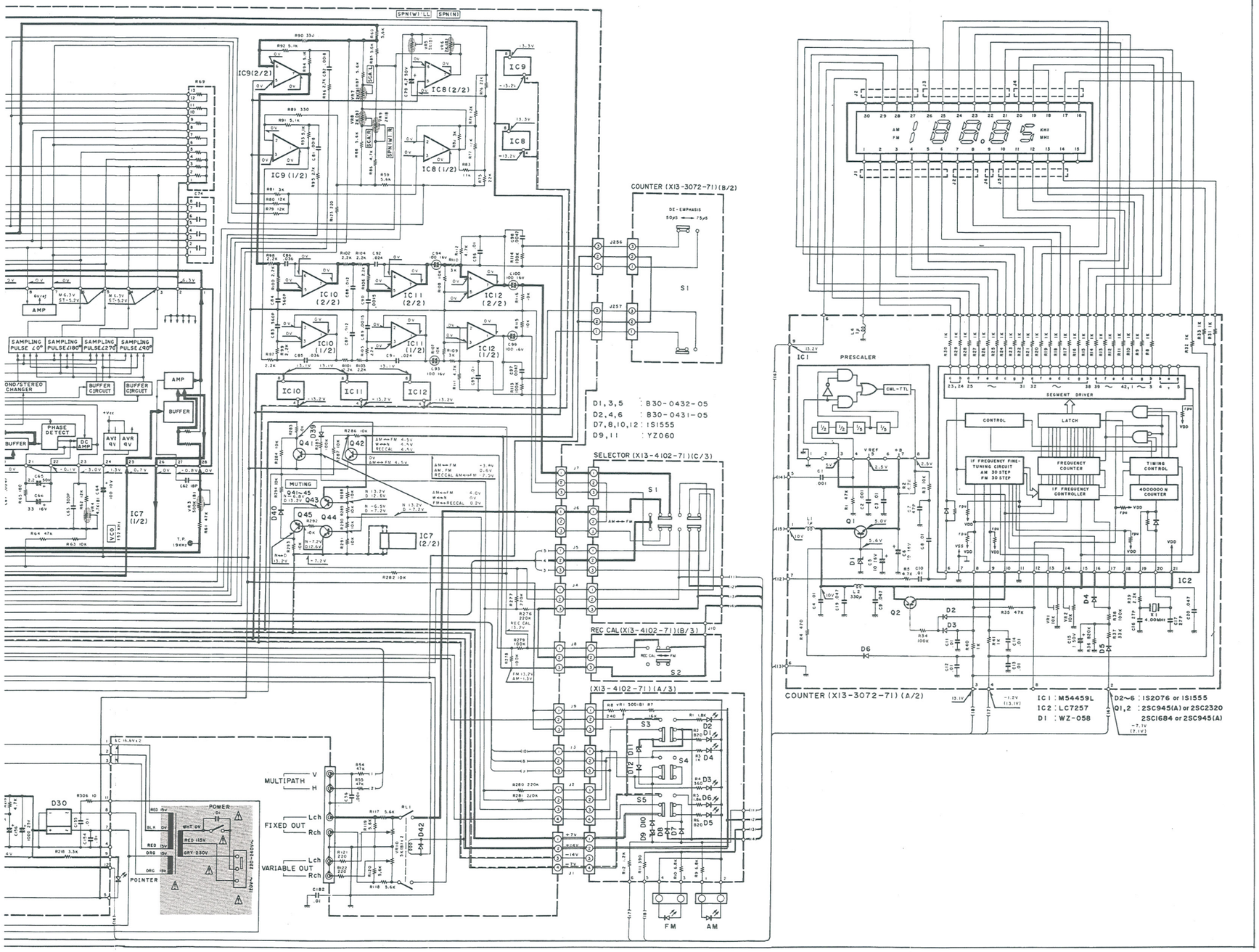
TR7040

AM-FM STEREO TUNER

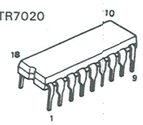
KT-1100



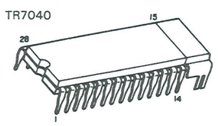
J K L M N O P Q



TR7020

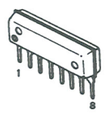


TR7040

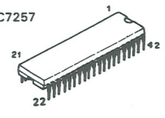


AN6556

M54459L



LC7257



SERVICE INFORMATION

CAUTION: FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS (REFER TO PART LIST).

⚠ INDICATES SAFETY CRITICAL COMPONENTS.

TO REDUCE THE RISK OF ELECTRIC SHOCK, LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS SHALL BE CARRIED OUT (EXPOSED PARTS ARE ACCEPTABLE INSULATED FROM THE SUPPLY CIRCUIT) BEFORE THE APPLIANCE IS RETURNED TO THE CUSTOMER.

- DC voltages are as measured with a high impedance voltmeter during reception of an FM broadcast signal (with a signal strength of 60 dB at the ANT terminal). Values may vary slightly due to variations between individual instruments or/and units. Values in parentheses are as measured during reception of an AM broadcast signal (with a signal strength of 60 dB at the ANT terminal).
- Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance pendant la réception d'un signal de programme FM (avec une force de signal de 60 dB à la borne ANT). Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.
  Les valeurs entre parenthèses doivent être mesurées pendant la réception d'un signal de programme AM (avec une force de signal de 60 dB à la borne ANT).
- Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Voltmeter bei Empfang eines UKW-Signals (mit einer Feldstärke von 60 dB am Antennenanschluß) gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u.U. geringfügig. Die eingeklammerten Gleichspannungswerte wurden bei Empfang eines AM-Signals (mit einer Feldstärke von 60 dB am Antennenanschluß) gemessen.

SPECIFICATIONS

FM TUNER SECTION	**NORMAL**	**DIRECT**
Usable Sensitivity	10.3dBf (0.9μV)	23.3dBf (4.0μV)
50dB Quieting Sensitivity		
(Mono)	16.3dBf (1.8μV)	26.8dBf (6.0μV)
(Stereo)	37.3dBf (20μV)	47.2dBf (63μV)
Signal to Noise Ratio (85dBf Input)		
(Mono)	90dB	
(Stereo)	85dB	
Total Harmonic Distortion	**WIDE**	**NARROW**
Mono 100Hz	0.015%	0.03%
1kHz	0.03%	0.15%
6kHz	0.06%	0.3%
15kHz	0.05%	0.06%
50Hz—10kHz	0.06%	0.3%
Stereo 100Hz	0.04%	0.3%
1kHz	0.04%	0.2%
6kHz	0.06%	0.2%
15kHz	0.35%	1.0%
50Hz—10kHz	0.12%	0.5%
Capture Ratio	0.8dB	2.0dB
Alternate Channel Selectivity	45.0dB	65.0dB (300kHz)
Stereo Separation		
1kHz	60.0dB	50.0dB
50Hz—10kHz	47.0dB	40.0dB
15kHz	40.0dB	35.0dB
Frequency Response	15Hz to 15kHz ±0.5dB	
Spurious Response Ratio	120dB	
Image Response Ratio	90dB	
IF Response Ratio	110dB	
AM Suppression Ratio	70dB	
Sub Carrier Product Ratio	75dB	
Antenna Impedance	75 ohms unbalanced	
FM Frequency Range	88MHz to 108MHz	
Output Level	0.75V, 2.2k ohms (Fixed)	
(1kHz 100% Mod.)	0 to 1.5V, 2.2k ohms (Variable)	
AM TUNER SECTION		
Usable Sensitivity	9μV	
Signal to Noise Ratio	55dB	
Total Harmonic Distortion	0.2%	
Image Rejection	70dB	
Selectivity	35dB (WIDE), 70dB (NARROW)	
Output Level	0.25V, 2.2k ohms (Fixed)	
(400Hz 30% Mod.)	0 to 0.5V, 2.2k ohms (Variable)	
GENERAL		
Power Requirements	50Hz 220V...European Model, 50Hz 240V...UK Model or 50/60Hz 110—120/220—240V (switchable)	
Power Consumption	17W at Rated Output 8 ohms	
Dimensions (W×H×D)	440×111×337mm (17-5/16"×4-3/8"×13-9/32")	
Weight (Net)	5.7kg (12.5lbs)	

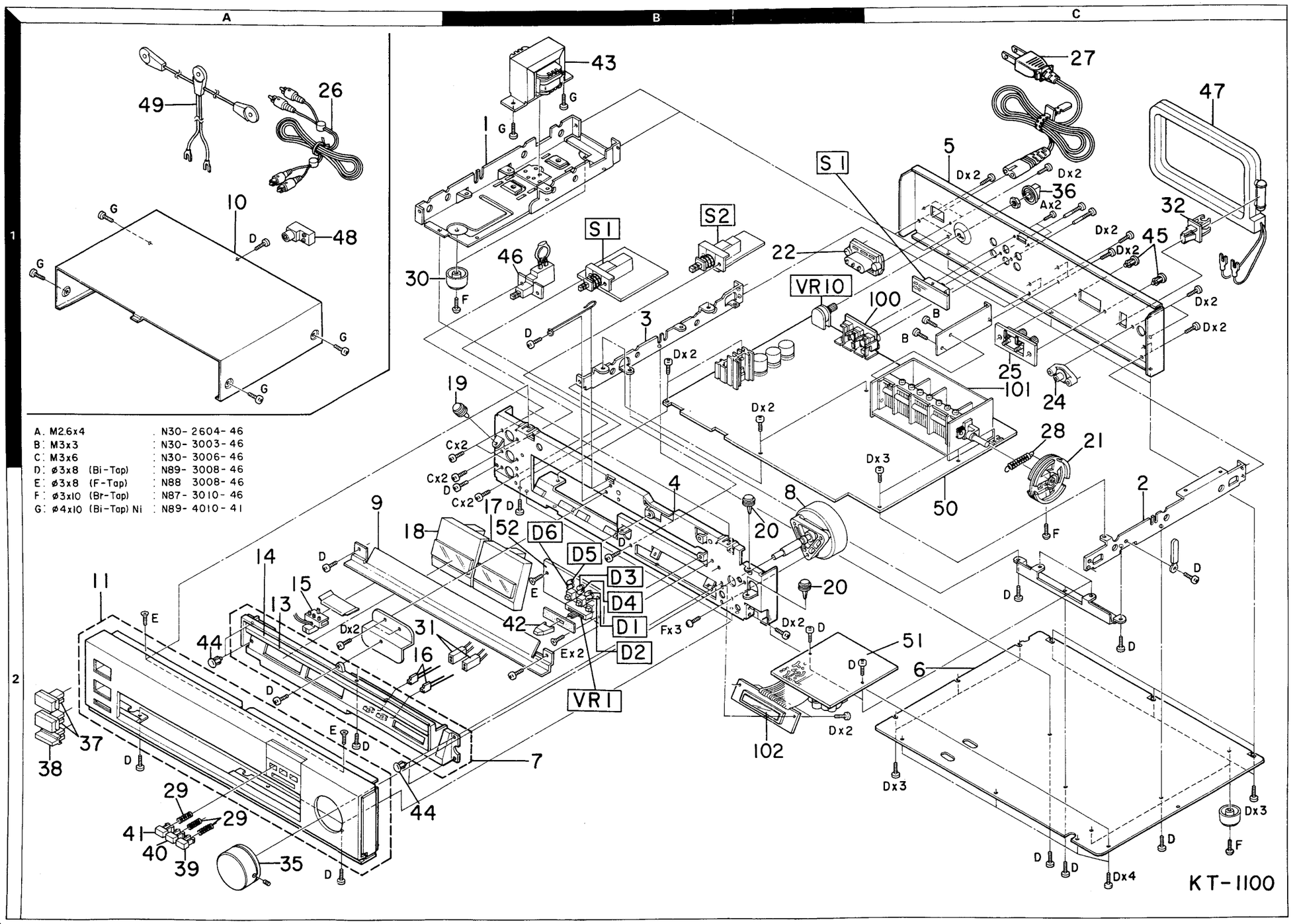
Kenwood follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Kenwood poursuit une politique de progrès constants en ce qui concerne le développement. Pour cette raison, les spécifications sont sujettes à modifications sans préavis.

Kenwood strebt ständige Verbesserungen in der Entwicklung an. Daher bleiben Änderungen der technischen Daten jederzeit vorbehalten.

KENW-00486 / DRUCK 6

EXPLODED VIEW



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			KT-1100			
1	1B		NØ STØCK	FRAME (L)		
2	2C		NØ STØCK	FRAME (R)		
3	1B		NØ STØCK	FRAME (C)		
4	2B		NØ STØCK	SUB PANEL		
5	1C		NØ STØCK	REAR PANEL		
6	2C		NØ STØCK	BØTTØM PLATE		
7	2B		NØ STØCK	DIAL BACK BØARD ASSY		
8	2B		NØ STØCK	DIAL SHAFT ASSY		
9	2A		NØ STØCK	RAIL FØR PØINTER		
10	1A		A01-0631-02	METALLIC CABINET		
11	2A	*	A20-3324-03	PANEL ASSY	PUMH	
11	2A	*	A20-3324-03	PANEL ASSY	UEXE	
11	2A	*	A20-3409-03	PANEL ASSY	T	
13	2A	*	B08-9040-04	INDICATØR		
14	2A	*	B20-0531-04	SCALE		
15	2A	*	B21-0053-05	PØINTER ASSY		
16	2A		B30-0258-05	LED		
17	2B	*	B31-0325-05	TUNING METER		
18	2A	*	B31-0326-05	SIGNAL METER		
-		*	B46-0093-03	WARRANTY CARD	P	
-		*	B46-0094-03	WARRANTY CARD	UHUE	
-		*	B46-0095-03	WARRANTY CARD	UHUE	
-		*	B46-0096-03	WARRANTY CARD	X	
-		*	B46-0097-03	WARRANTY CARD	T	
-		*	B46-0098-03	WARRANTY CARD	E	
-		*	B50-4598-00	INSTRUCTIØN MANUAL	UHUE	
-		*	B50-4599-00	INSTRUCTIØN MANUAL	PMX	
-		*	B50-4600-00	INSTRUCTIØN MANUAL	M	
-		*	B50-4601-00	INSTRUCTIØN MANUAL	T	
-		*	B50-4602-00	INSTRUCTIØN MANUAL	E	
-			B58-0223-04	CAUTIØN CARD	U	
-			B58-0245-23	CAUTIØN CARD	E	
-			B58-0513-04	CAUTIØN CARD	MHUEX	
-			B58-0513-04	CAUTIØN CARD	E	
-		*	B59-0092-00	SERVICE DIRECTØRY	UHUE	
⚠ C1	1B		C91-0029-05	CERAMIC 0.01UF AC125V		
19	1B		D15-0174-05	PULLEY ASSY		
20	2B		D15-0175-15	PULLEY ASSY		
21	1C		D15-0176-13	DIAL PULLEY		
⚠ 22	1B		E03-0102-15	AC INLET		
24	1C		E04-0006-05	RF CØAXIAL CABLE RECEPTACLE		
25	1C		E20-0228-05	SCREW TERMINAL BØARD		
26	1A		E30-0505-05	AUDIØ CØRD		
27	1C	*	E30-0779-05	AC PØWER CØRD (INLET)	P	
⚠ 27	1C		E30-1305-15	AC POWER CORD (INLET)	UMUE	
⚠ 27	1C		E30-1528-15	AC POWER CORD (INLET)	T	
⚠ 27	1C		E30-1529-05	AC POWER CORD (INLET)	E	
⚠ 27	1C		E30-1542-05	AC POWER CORD (INLET)	X	
28	1C		G01-0368-04	EXTENSIØN SPRING		
29	2A	*	G01-0498-04	CØMPRESSIØN SPRING		

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-		*	H01-4379-04	ITEM CARTON CASE	T	
-		*	H01-4380-04	ITEM CARTON CASE	PUMH	
-		*	H01-4380-04	ITEM CARTON CASE	UEXE	
-			H10-2322-02	POLYSTYRENE FOAMED FIXTURE		
-			H10-2323-02	POLYSTYRENE FOAMED FIXTURE		
-			H20-0452-04	PROTECTION COVER		
-			H25-0078-04	PROTECTION BAG		
-			H25-0113-04	PROTECTION BAG		
30	1A		J02-0127-05	FOOT		
31	2B		J19-0306-05	LEAD HOLDER		
32	1C		J19-0626-12	ANTENNA HOLDER		
35	2A	*	K21-0396-04	KNOB.(TUNING)		
36	1C		K23-0351-04	KNOB.(VOLUME)		
37	2A		K27-0370-04	KNOB (BUTTON).(POWER,SEL.)		
38	2A	*	K27-0859-04	KNOB (BUTTON).(REC CAL)		
39	2A	*	K27-0860-04	KNOB (BUTTON).(FM RF SEL)		
40	2A	*	K27-0861-04	KNOB (BUTTON).(IF BAND)		
41	2A	*	K27-0862-04	KNOB (BUTTON).(MODE)		
42	2B	*	K27-0863-04	KNOB (LEVER) .(MUTE LEVEL)		
⚠ 43	1B	*	L01-2814-05	POWER TRANSFORMER		
		*	N09-0399-15			
44	2A		N29-0033-05	PUSH RIVET 3X6.5		
45	1C		N29-0035-05	PUSH RIVET 3.5X5.5		
⚠ 46	1B	*	S40-1066-05	PUSH SWITCH (POWER TYPE)		
47	1C		T90-0111-15	LOOP ANTENNA		
48	1C		T90-0122-05	ANTENNA ADAPTOR		
49	1C		T90-0202-05	FEEDER ANTENNA FOR OVERSEAS		
50	2C	*	X05-2412-71	TUNER UNIT		
51	2B	*	X13-3072-71	SUB-CIRCUIT UNIT		
52	2B	*	X13-4102-71	SUB-CIRCUIT UNIT		
TUNER UNIT (X05-2412-71)						
C2			C91-0083-05	CERAMIC 0.01UF N		
C6 -15			C91-0083-05	CERAMIC 0.01UF N		
C16			CK14D1H102M	CERAMIC 1000PF M		
C17 -22			C91-0083-05	CERAMIC 0.01UF N		
C23			C91-0084-05	CERAMIC 4700PF N		
C26 ,27			CQ93FM1H223J	MYLAR 0.022UF J		
C28			CK45FF1H473Z	CERAMIC 0.047UF Z		
C29			C91-0083-05	CERAMIC 0.01UF N		
C33			C91-0083-05	CERAMIC 0.01UF N		
C44 -46			C91-0085-05	CERAMIC 0.022UF N		
C48 ,49			C91-0177-05	POLYSTY 82PF K		
C50			CC14SL1H150J	CERAMIC 15PF J		
C51		*	CC45FCH1H101J	CERAMIC 100PF J		
C52		*	C91-0191-05	CERAMIC 0.022UF K		
C56			CK14D1H102M	CERAMIC 1000PF M		
C59			CQ93FM1H473K	MYLAR 0.047UF K		
C62			CC45FSL1H180J	CERAMIC 18PF J		
C63		*	CQ09S1H301JY0	POLYSTY 300PF J		
C67			CQ93FM1H472J	MYLAR 4700PF J		
C70			CQ09FS1H472J	POLYSTY 4700PF J		

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C74		*	C91-0624-05	CAPACITOR ASSY		
C75 -78			CQ93FM1H102J	MYLAR 0.001UF J		
C81 ,82		*	CQ93FM1H182J	MYLAR 1800PF J		
C83 ,84		*	CQ09FS1H561J	POLYSTY 560PF J		
C85 ,86		*	CQ93FM1H363J	MYLAR 0.036UF J		
C87 ,88			CQ93FM1H123J	MYLAR 0.012UF J		
C89 ,90			CQ93FM1H152J	MYLAR 1500PF J		
C91 ,92		*	CQ93FM1H243J	MYLAR 0.024UF J		
C95 ,96			CQ93FM1H103J	MYLAR 0.010UF J		
C97 ,98			CQ93FM1H472J	MYLAR 4700PF J		
C111			CC45FSL1H330J	CERAMIC 33PF J		
C112,113			C91-0085-05	CERAMIC 0.022UF N		
C114			CK14D1H102M	CERAMIC 1000PF M		
C115			CK45FF1H473Z	CERAMIC 0.047UF Z		
C116,117			C91-0085-05	CERAMIC 0.022UF N		
C119			C91-0085-05	CERAMIC 0.022UF N		
C120			CK14D1H102M	CERAMIC 1000PF M		
C122			C91-0083-05	CERAMIC 0.01UF N		
C125			C91-0085-05	CERAMIC 0.022UF N		
C126		*	CC45FUJ1H200J	CERAMIC 20PF J		
C127		*	CQ09FS1H361J	POLYSTY 360PF J		
C128			CC45FSL1H101J	CERAMIC 100PF J		
C129			CQ93FM1H102J	MYLAR 0.001UF J		
C130			C91-0083-05	CERAMIC 0.01UF N		
C131			CK14D1H102M	CERAMIC 1000PF M		
C133			C91-0085-05	CERAMIC 0.022UF N		
C135			CQ93FM1H392K	MYLAR 3900PF K		
C136			CQ93FM1H393K	MYLAR 0.039UF K		
C137			CQ93FM1H103J	MYLAR 0.010UF J		
C138			CQ93FM1H223J	MYLAR 0.022UF J		
C140,141		*	CQ93FM1H823J	MYLAR 0.082UF J		
C147			CQ09FS1H181J	POLYSTY 180PF J		
C148			CK45FF1H473Z	CERAMIC 0.047UF Z		
C149,150			C91-0085-05	CERAMIC 0.022UF N		
C154,155			CK45FF1H103Z	CERAMIC 0.01UF Z		
C160,161			CK45FF1H103Z	CERAMIC 0.01UF Z		
C166,167			CK45FB1H222K	CERAMIC 2200PF K		
C168			CC45FSL1H221J	CERAMIC 220PF J		
C174			CK45FF1H103Z	CERAMIC 0.01UF Z		
C181			CK45FF1H473Z	CERAMIC 0.047UF Z		
C182			CK45F1H103Z	CERAMIC 0.01UF Z		
C183			CC45SL1H330J	CERAMIC 33PF J		
J00	1C		E13-0618-05	PHONO JACK ..6P(FM OUT)		
-			L79-0148-05	FILTER SET(CF5-7 ASSY)		
-			L79-0179-05	FILTER SET(CF1-4 ASSY)		
CF1			L72-0181-05	CERAMIC FILTER		
CF2 ,3			L72-0191-05	CERAMIC FILTER		
CF4			L72-0181-05	CERAMIC FILTER		
CF5			L72-0097-05	CERAMIC FILTER		
CF6			L72-0152-05	CERAMIC FILTER (450KHZ)		
CF7			L72-0095-05	CERAMIC FILTER		
L1			L30-0319-05	FM IFT		
L2 ,3			L30-0318-05	FM IFT		

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L4			L30-0361-15	FM IFT		
L5			L39-0089-05	PEAKING COIL (120KHZ)		
L6			L32-0252-05	FM OSCILLATING COIL		
L7 ,8			L40-2292-11	SMALL FIXED INDUCTOR(2.2UH)		
L9			L40-4721-28	SMALL FIXED INDUCTOR(4.7MH)		
L10			L79-0162-05	LC FILTER (L.P.F)		
L13			L40-1092-11	SMALL FIXED INDUCTOR(1.0UH)		
L14		*	L31-0463-15	MW-RF COIL		
L15			L31-0464-25	MW-RF COIL		
L16			L30-0337-05	AM IFT		
L17			L32-0254-15	MW OSCILLATING COIL		
L18			L32-0242-05	LW OSCILLATING COIL		
L19			L35-0061-05	MPX COIL		
L20			L79-0120-05	LC FILTER (B.P.F)		
-			N19-0190-05	INSULATING WASHER		
-			N19-0547-04	FLAT WASHER		
-			N35-3008-46	BI-HEAD MACHINE SCREW M3X8,+		
-			N89-3008-46	BI-HEAD TAPTITE SCREW 3X8,+		
R1			RD14GB2E560J	FL-PROOF RD 56 J 2E		
R2			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R3			RD14GB2E560J	FL-PROOF RD 56 J 2E		
R6			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R10			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R22			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R38			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R69		*	R90-0215-05	MULTIPLE RESISTOR		
R136			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R139			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R152			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R201,202			RD14GB2E100J	FL-PROOF RD 10 J 2E		
R306			RD14GB2E100J	FL-PROOF RD 10 J 2E		
R308			R92-0513-05	FL-PROOF RD 10 G 2E		
VR1			R12-0302-05	TRIMMING POT. 500		
VR2			R12-1303-05	TRIMMING POT. 2K		
VR3			R12-7301-05	TRIMMING POT. 500K		
VR4			R12-1040-05	TRIMMING POT. 4.7K		
VR5			R12-2302-05	TRIMMING POT. 5K		
VR6 -8			R12-1303-05	TRIMMING POT. 2K		
VR9			R12-2302-05	TRIMMING POT. 5K		
VR10			R06-2012-05	VARIABLE RESISTOR(OUTPUT) 5KB		
VR11			R12-3301-05	TRIMMING POT. 20K		
VR12			R12-5302-05	TRIMMING POT. 100K		
VR13			R12-3302-05	TRIMMING POT. 10K		
RL1			S51-2037-05	REED RELAY		
S1			S31-2072-05	SLIDE SWITCH (DE-EMPHASIS)		
			1S2076	DIODE		
D1 -12			1S1555	DIODE		
D13 ,14			1N60	DIODE		
D15 -29			1S1555	DIODE		
D30			S1WB10	DIODE		
D31			XZ-060	ZENER DIODE		
D32			S1WB10	DIODE		
D33			XZ-060	ZENER DIODE		
D34 ,35			XZ-076	ZENER DIODE		

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PARTS LIST

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
D36			WZ-100	ZENER DIODE		
D37			1S2076A	DIODE		
D38 -45			1S1555	DIODE		
IC1 ,2			UPC1163H	IC		
IC3			TR7020	IC		
IC4			TR4011	IC		
IC5 ,6			MB84066BM	IC		
IC7			TR7040	IC		
IC8 -11			AN6556	IC		
IC12			NJM4560D-N	IC		
IC13			MB84066BM	IC		
IC14			AN6552	IC		
IC15			AN6556	IC		
IC16			MB84066BM	IC		
IC17			MB84069BM	IC		
IC18,19			AN6556	IC		
IC20			LA1245	IC		
Q1			2SK125	FET		
Q2			2SA733(A)(Q,P)	TRANSISTOR		
Q2			2SA999(E,F)	TRANSISTOR		
Q3			2SC2320(E,F)	TRANSISTOR		
Q3			2SC945(A)(Q,P)	TRANSISTOR		
Q4			2SK161(Y)	FET		
Q5 -8			2SC2320(E,F)	TRANSISTOR		
Q5 -8			2SC945(A)(Q,P)	TRANSISTOR		
Q9 -11			2SK105(H,J)	FET		
Q12 ,13			2SC2320(E,F)	TRANSISTOR		
Q12 ,13			2SC945(A)(Q,P)	TRANSISTOR		
Q14			2SC1735(E)	TRANSISTOR		
Q15			2SC2320(E,F)	TRANSISTOR		
Q16			2SA733(A)(Q,P)	TRANSISTOR		
Q16			2SA999(E,F)	TRANSISTOR		
Q17			2SC2320(E,F)	TRANSISTOR		
Q18			2SA999(E,F)	TRANSISTOR		
Q19			2SD330(E,F)	TRANSISTOR		
Q20			2SB514(E,F)	TRANSISTOR		
Q21			2SC2320(E,F)	TRANSISTOR		
Q22			2SA999(E,F)	TRANSISTOR		
Q23			2SD330(E,F)	TRANSISTOR		
Q24			2SB514(E,F)	TRANSISTOR		
Q25			2SD330(E,F)	TRANSISTOR		
Q26 -31			2SC2320(E,F)	TRANSISTOR		
Q26 ,27			2SC2320(E,F)	TRANSISTOR		
Q28 -31			2SC945(A)(Q,P)	TRANSISTOR		
Q32 ,33			2SA733(A)(Q,P)	TRANSISTOR		
Q32 ,33			2SA999(E,F)	TRANSISTOR		
Q34 -36			2SC2320(E,F)	TRANSISTOR		
Q34 -36			2SC945(A)(Q,P)	TRANSISTOR		
Q37 -39			2SA733(A)(Q,P)	TRANSISTOR		
Q37 -39			2SA999(E,F)	TRANSISTOR		
Q40 -42			2SC2320(E,F)	TRANSISTOR		
Q40 -42			2SC945(A)(Q,P)	TRANSISTOR		
Q43			2SA733(A)(Q,P)	TRANSISTOR		
Q43			2SA999(E,F)	TRANSISTOR		
Q44			2SC2320(E,F)	TRANSISTOR		

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Q44			2SC945(A)(Q,P)	TRANSISTOR		
Q45 ,46			2SA733(A)(Q,P)	TRANSISTOR		
Q45 ,46			2SA999(E,F)	TRANSISTOR		
Q47			2SC2320(E,F)	TRANSISTOR		
Q47			2SC945(A)(Q,P)	TRANSISTOR		
101	1C	*	W02-0056-15	FM FRONT-END ASSY		
SUB CIRCUIT UNIT (X13-3072-71)						
102	2B	*	B38-0037-05	LED DISPLAY ASSY		
C1 ,2			CK45B1H102K	CERAMIC 0.001UF K		
C3 ,4			CK45F1H103Z	CERAMIC 0.01UF Z		
C7			CC45SL1H470J	CERAMIC 47PF J		
C8			CK45F1H103Z	CERAMIC 0.01UF Z		
C9			CK45F1H473Z	CERAMIC 0.047UF Z		
C10 -14			CK45F1H103Z	CERAMIC 0.01UF Z		
C16 ,17			CC45CG1H270J	CERAMIC 27PF J		
C18			CK45F1H103Z	CERAMIC 0.01UF Z		
C19 ,20			CK45F1H473Z	CERAMIC 0.047UF Z		
L1			L40-1092-11	SMALL FIXED INDUCTOR		
L2		*	L40-3311-11	SMALL FIXED INDUCTOR		
L5 ,6			L40-1092-11	SMALL FIXED INDUCTOR		
X1			L77-0574-05	CRYSTAL RESONATOR		
			N09-0394-05	SEMS (TAPTITE SCREW)		
VR1 ,2			R12-3302-05	SEMI FIXED VARIABLE RESITSTOR		
			1S1555	DIODE		
			2SC2320	TRANSISTOR		
D1		*	WZ-058	ZENER DIODE		
D2 -6			1S2076	DIODE		
IC1		*	M54459L	IC		
IC2			LC7257	IC		
Q1 -3			2SC945(A)	TRANSISTOR		
SUB CIRCUIT UNIT (X13-4102-71)						
D1			B30-0432-05	LED..NORMAL(GRN) LN31GCPH(U)		
D2			B30-0431-05	LED..DIRECT(RED) LN21CPH		
D3			B30-0432-05	LED..WIDE(GRN) LN31GCPH(U)		
D4			B30-0431-05	LED..NARROW(RED) LN21CPH		
D5			B30-0432-05	LED..STEREO(GRN) LN31GCPH(U)		
D6			B30-0431-05	LED..MONO(RED) LN21CPH		
VR1		*	R13-0002-05	SLIDE TYPE VARIABLE RESISTOR		
S1			S40-4037-05	PUSH SWITCH (SELECTOR..FM/AM)		
S2			S40-2127-05	PUSH SWITCH (FM REC CAL)		
S3 -5			S40-2142-05	PUSH SWITCH (N/D,W/N,ST/MONO)		
			1S2076	DIODE		
D7 ,8			1S1555	DIODE		
D9			XZ-060	ZENER DIODE		
D10			1S1555	DIODE		
D11			XZ-060	ZENER DIODE		
D12			1S1555	DIODE		

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